

# Service Manual

**dbx®/Dolby NR Equipped  
Stereo Cassette Deck**

DOLBY B-C NR HX PRO

Cassette Deck

**RS-B605**

Color

(K)...Black Type  
(S)...Silver Type



Color	Areas
(K)	[M].....U.S.A.
(K)	[MC] .....Canada.
(K) (S)	[E].....All European areas except United Kingdom.
(K) (S)	[EK] .....United Kingdom.
(K) (S)	[EG].....F.R. Germany.
(K) (S)	[EH].....Holland.
(K) (S)	[XA] .....Asia, Latin America, Middle Near East, Africa and Oceania.
(K) (S)	[XL].....Australia.
(K) (S)	[XB].....Saudi Arabia.

## SPECIFICATIONS

### CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
REC/PLAY	Solid Permaloy head
Erasing	Double-gap ferrite head
Motors	Electronically controlled DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1-7/8 ips)
S/N	(signal level = max recording level, CrO <sub>2</sub> type tape)
dbx on	92 dB (A weighted)
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
NR off	56 dB (A weighted)
Wow and flutter	0.06% (WRMS)

Frequency response	±0.18% (DIN)
METAL	20 Hz~19 kHz
CrO <sub>2</sub>	30 Hz~18 kHz (DIN)
NORMAL	20 Hz~18 kHz
Dynamic Range (with dbx on)	30 Hz~17 kHz (DIN)
Max. Input level improvement (with dbx on)	30 Hz~16 kHz (DIN)
	110 dB (1 kHz)
	10 dB
Fast Forward and Rewind Time	
Input sensitivity and impedance	Approx. 100 seconds with C-60 cassette tape
MIC	0.25 mV/400 Ω~10 kΩ
LINE	60 mV/47 kΩ
Output voltage and impedance	

LINE	400 mV/3 kΩ
HEADPHONES	80 mV/8 Ω

### GENERAL

Power consumption 20W

Power supply

For U.S.A. and Canada AC 60 Hz, 120V

For continental Europe AC 50 Hz/60 Hz, 220V

For United Kingdom and others

AC 50 Hz/60 Hz, 110V/127V/220V/240V

Dimensions (W×H×D) 430 × 114.5 × 287 mm

(16-15/16" × 4-1/2" × 11-5/16")

Weight 4.3 kg (9.5 lb.)

Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

\* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

\*\* The term dbx is a registered trademark of dbx Inc.

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# Technics

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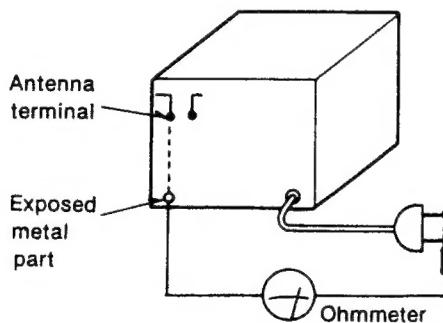
## ■ SAFETY PRECAUTION (This "safety precaution" applies only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

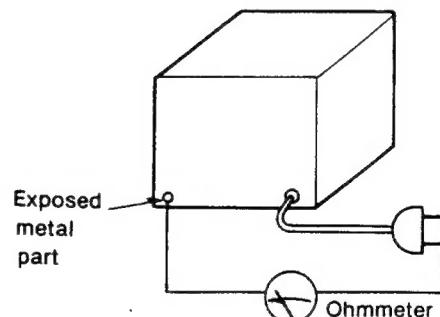
### • INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between  $3M\Omega$  and  $5.2M\Omega$  to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

**Note:** Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)



(Fig. B)

Resistance =  $3M\Omega$ — $5.2M\Omega$

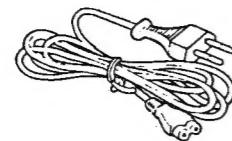
Resistance = Approx  $\infty$

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

## ■ ACCESSORIES

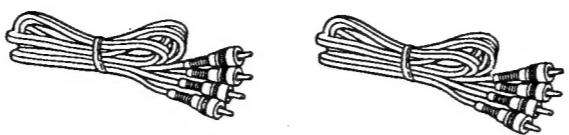
- AC power supply cord ..... 1

SJA171	[E, EH, EG]
SFDAC05G02	[EK]
SJA173	[XL]
SJA168-1	[XA]
SJA183	[XB]
SJA170T	[M]
SJA170	[MC]

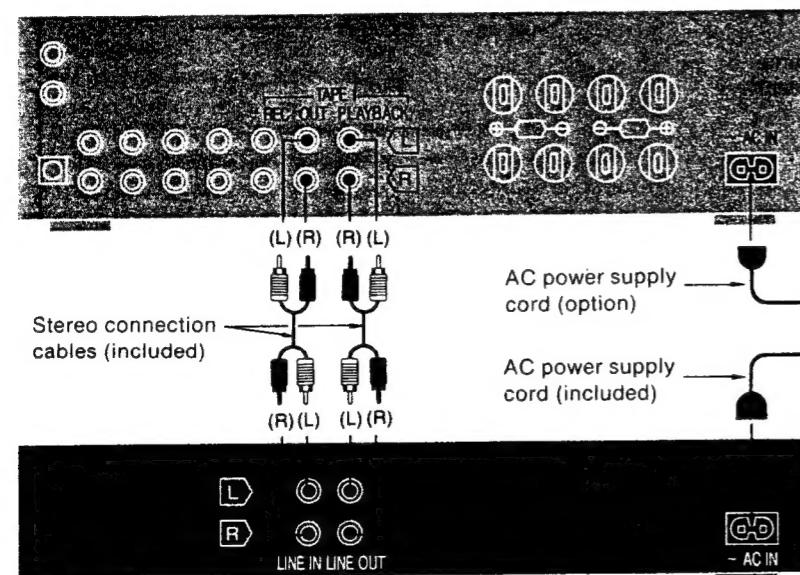


Note: Configuration of AC power supply cord differs according to area.

- Stereo connection cables ..... 2  
(SJP2264)



## ■ HOW TO CONNECTION



Stereo amplifier  
(option)

### Placement Hints

If this unit is placed near a stereo amplifier or tuner, a "hum" noise may be heard during tape playback, recording, or AM reception of the tuner. If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

### Note:

The configuration of the AC outlet and AC power supply cord differs according to area.  
**(For United Kingdom)**  
Fit a suitable plug to the AC power supply cord.

## ■ LOCATION OF CONTROLS

### Power switch (power)

### Timer stand-by switch (timer)

This switch is to be used in order to perform an unattended recording or preset playback operation.

### Cassette holder

### Eject button (eject△)

### Recording indicator (rec)

### Playback indicator (play)

### Rewind button (rew/◀◀)

Press this button rewind, or for tune search during playback.

### Stop button (stop/■)

### Playback button (play/▶)

### Fast-forward button (ff/▶▶)

Press this button for fast-forward, or for tune search during playback.

### Record button (rec/●)

### Pause button (pause/II)

### Tape counter/reset button (tape counter/reset)

This indicates the amount of tape travel. When this button is pressed, the readout will be reset to "000".

### Level meters (peak level)

During recording, these meters indicate the recording level. The level is adjusted by using the recording level control. During playback, they indicate the level of the recorded sound.

### Noise-reduction switches/indicators (noise reduction)

(See below)

### Recording level control (rec level)

### Recording balance control (balance)

### Microphone jacks (mic)

### Headphones jack (phones)

### Record-muting button (auto rec mute/o)

### Pause button (pause/II)

## Noise reduction systems

### Dolby NR B type

Noise is reduced to about one-third. Use this system when playing back tapes recorded by the Dolby noise-reduction system, such as prerecorded music tapes, etc.

### Dolby NR C type

Hiss noise is reduced to about one-tenth. Use this system for the recording and playback of sound sources that have a wide dynamic range and good tone quality, such as FM broadcasts of live performances, etc., and for playing back such tapes.

### dbx noise-reduction system

With this noise-reduction system, "hiss" noise is reduced to about 1/30. This system is particularly suitable for the recording and playback of live FM broadcasts and other sound sources with high tone quality and a wide dynamic range.

### About the Dolby HX Pro headroom extension system

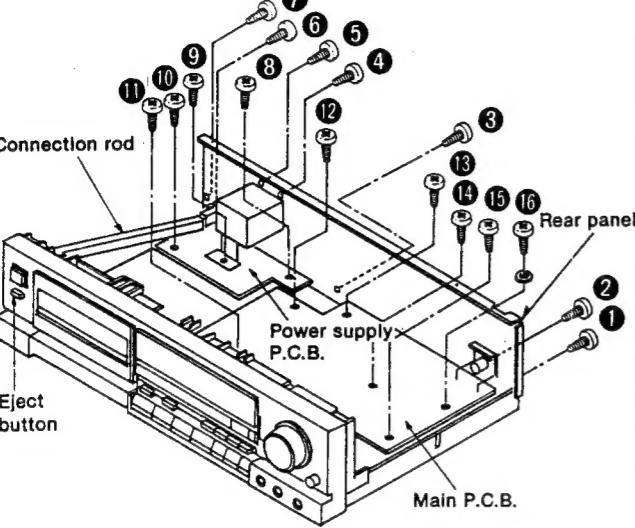
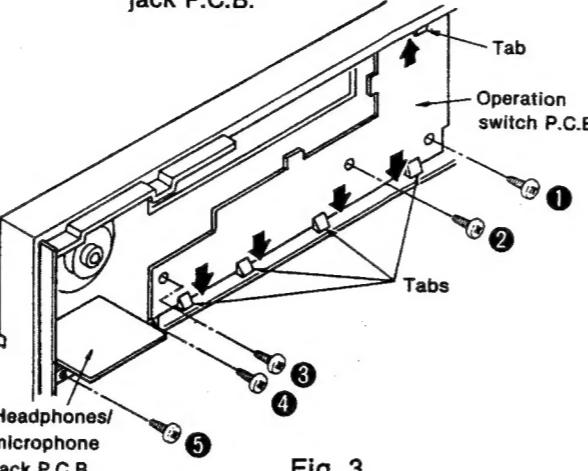
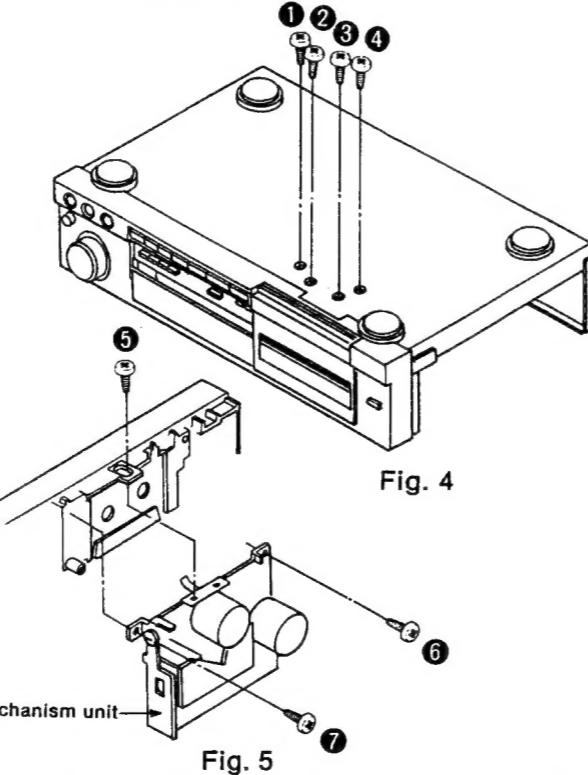
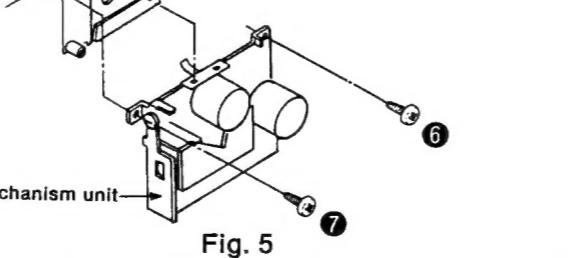
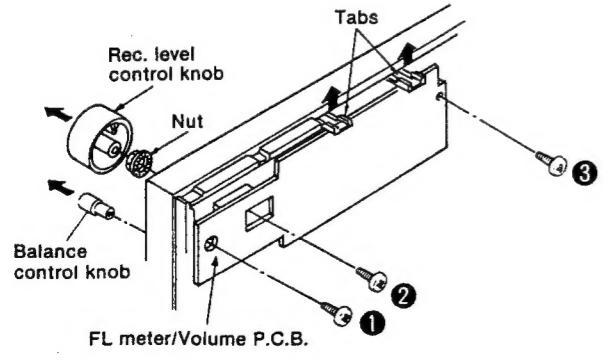
By functioning to improve the maximum output level of the tape's high-frequency range, this system permits recordings without a drop of the level of the sound source's high-frequency range. In addition, by using the system in parallel with this unit's noise-reduction system, recording and playback with a greatly extended dynamic range is possible.

• Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

• The term dbx is a registered trademark of dbx Inc.

## ■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	<b>How to remove the cabinet</b>	Ref. No. 4	<b>How to remove the operation switch P.C.B. and the headphones/microphone jack P.C.B.</b>
Procedure 1	• Remove the 7 screws.	Procedure 1→2→3→4	• Remove the 3 screws (①~③). • Release the 5 tabs, and then remove the operation switch P.C.B. • Remove the 2 screws (④, ⑤), and then remove the headphones/microphone jack P.C.B.
Ref. No. 2	<b>How to remove the power supply P.C.B. and the main P.C.B.</b>		
Procedure 1→2	• Remove the 7 screws (①~⑦), and then remove the rear panel. • Remove the connection rod. • Remove the 3 screws (⑧~⑩). • Remove the power supply P.C.B. • Remove the 6 screws (⑪~⑯). • Remove the main P.C.B.		
 <p><b>Fig. 1</b></p>			 <p><b>Fig. 3</b></p>
Ref. No. 5	<b>How to remove the mechanism unit</b>		
Procedure 1→2→5	• Remove the 4 screws (①~④). • Remove the 3 screws (⑤~⑦). • Push the eject button and remove the mechanism unit.		
 <p><b>Fig. 4</b></p>			 <p><b>Fig. 5</b></p>
Ref. No. 3	<b>How to remove the FL meter/Volume P.C.B.</b>		
Procedure 1→2→3	• Pull out the rec. level control knob and the nut. • Pull out the balance control knob. • Remove the 3 screws (①~③). • Release the 2 tabs, and then remove the FL meter/Volume P.C.B.		
 <p><b>Fig. 2</b></p>			
<b>"ATTENTION SERVICER"</b> Some chassis components may have sharp edges. Be careful when disassembling and servicing.			

## ■ MEASUREMENT AND ADJUSTMENT METHODS

### Measurement Condition

- Rec. level control; Maximum
- Timer start switch; Off
- Noise reduction select switch; Off

- Balance control; Center
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature  $20\pm 5^\circ\text{C}$  ( $68\pm 9^\circ\text{F}$ )

### Measuring instrument

- EVM(Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

- ATT(Attenuator)
- DC voltmeter
- Resistor (600Ω)

### Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

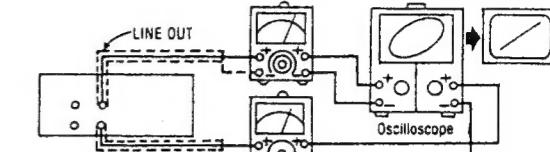
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment  
Normal reference blank tape; QZZCRA  
CrO<sub>2</sub> reference blank tape; QZZCRX  
Metal reference blank tape; QZZCRZ

### HEAD AZIMUTH ADJUSTMENT

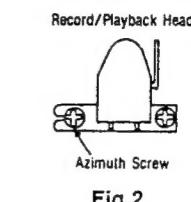
- 1.Playback the azimuth adjustment portion (8 kHz, -20 dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

- 2.Perform the same adjustment in the play mode.



**Fig.1**

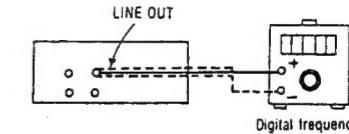


**Fig.2**

### TAPE SPEED ADJUSTMENT

- 1.Playback the middle portion of the test tape (QZZCWAT).
- 2.Adjust the VR in the motor so that the output is within the standard value.

Standard value:  $3000 \pm 15\text{Hz}$

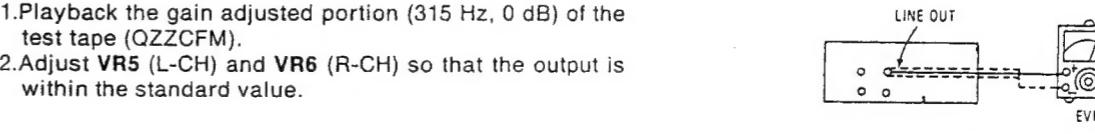


**Fig.3**

### PLAYBACK GAIN ADJUSTMENT

- 1.Playback the gain adjusted portion (315 Hz, 0 dB) of the test tape (QZZCFM).
- 2.Adjust VR5 (L-CH) and VR6 (R-CH) so that the output is within the standard value.

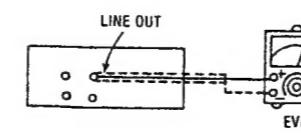
Standard value:  $0.4V \pm 0.5\text{dB}$



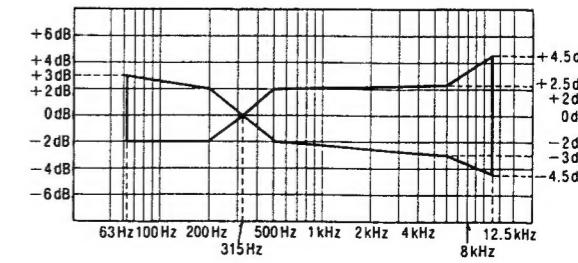
**Fig.4**

### PLAYBACK FREQUENCY RESPONSE

- 1.Playback the frequency response portion (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) of the test tape (QZZCFM).
- 2.Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.



**Fig.5**



**Fig.6**

## OVERALL FREQUENCY RESPONSE (Bias current adj.)

- Insert the a Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
- Apply a reference input signal (1 kHz, -24 dB) through an attenuator.
- Attenuate the signal by 20 dB and adjust the frequency from 50 Hz ~ 12.5 kHz.
- Record the frequency sweep.
- Playback the recorded signal and assure that it is within the range shown in Fig.8 in comparison to the reference frequency (1 kHz).
- If it is not within the standard range, adjust VR301 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
  - Level up in high frequency range.....Increase the bias current.
  - Level down in high frequency range...Decrease the bias current.
- Repeat steps 2 ~ 6 above using the CrO<sub>2</sub> tape(QZZCRX) and the Metal tape(QZZCRZ) increasing the frequency range to 14 kHz (50 Hz ~ 14 kHz).
- Assure that the level is within the range shown in Fig.9.

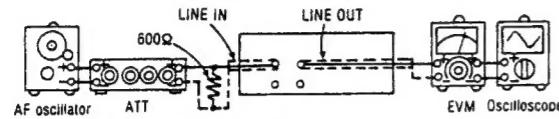


Fig.7

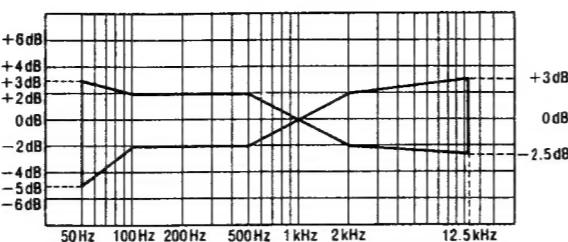


Fig.8

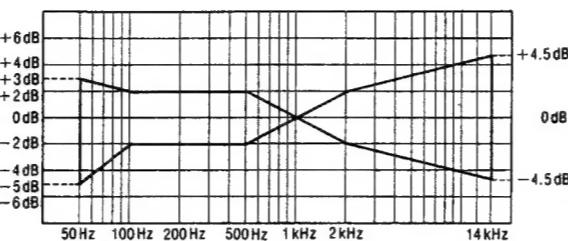


Fig.9

## OVERALL GAIN ADJUSTMENT

- Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
- Apply a reference input signal (1 kHz, -24 dB). Attenuate the output so that its level becomes 0.4V.
- Record this input signal.
- Playback the signal recorded in step 3 above , and assure that the output is within the standard value.
- If it is not within the standard value, adjust VR7 (L-CH) and VR8 (R-CH).
- Repeat the step 2 ~ 5 above until the output is within the standard value.

Standard value:  $0.4V \pm 0.5dB$

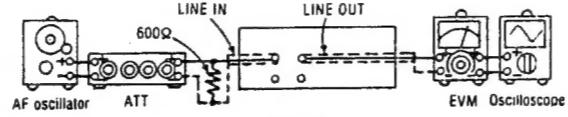


Fig.10

## FLUORESCENT METER ADJUSTMENT

- Insert the Normal blank test tape(QZZCRA) and apply a reference input signal ( 1 kHz, -24 dB) in the Record Pause mode.
- Using an attenuator, adjust until the voltage of the tape decks "LINE OUT" terminals is 0.4V.
- Adjust VR701 so that the "0 dB" segment is slightly illuminated.

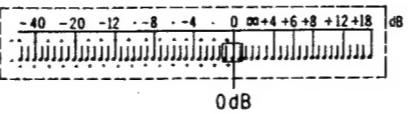


Fig.11

## dbx TIMING ADJUSTMENT

- Shift the noise reduction switch to the dbx position.
- Playback the gain adjustment portion (315 Hz, 0 dB) of the test tape (QZZCFM).
- Connect a DC voltmeter across TP501 and TP502.
- Adjust VR501 so that the output is within the standard value.

Standard value:  $DC18.4mV \pm 0.5mV$

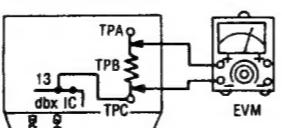
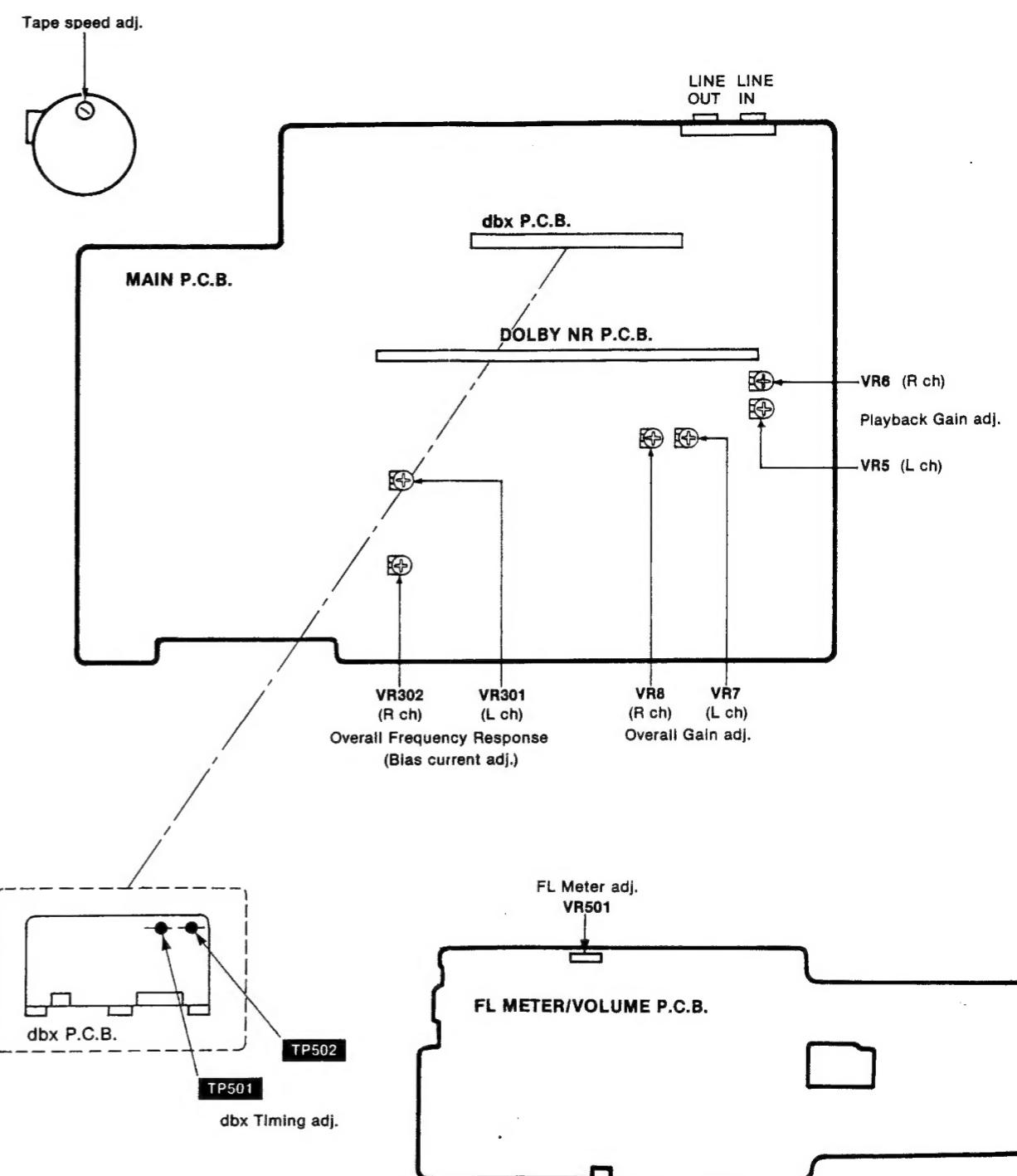


Fig.12  
TPA: TP501, TPB: R521, TPC: TP502

## • Adjustment point

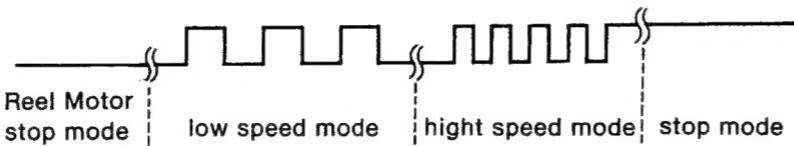
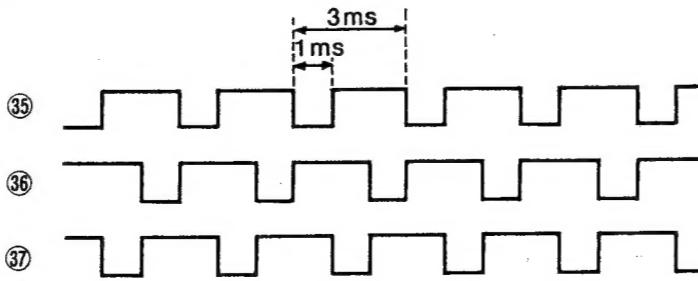


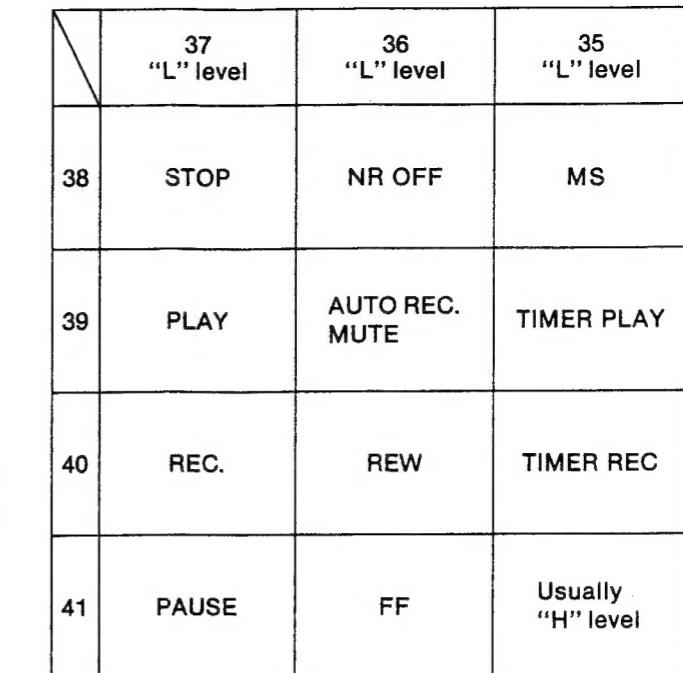
## ■ MICROCOMPUTER TERMINAL FUNCTION AND WAVEFORM (IC801: M50720-411SP)

\* This microcomputer is used for mechanical operation.

Terminal No.	In/Out	Symbol	Function/operation
1	In/Out	NRB	Reading of Dolby B switch (S10) & Dolby B LED control. • "L" input when switch (S10) is on mode. • "H" input when switch (S10) is off mode. • Dolby B LED turned on when output level is "L". • Dolby B LED turned off when output level is "H".
2	In/Out	NRC	Reading of Dolby C switch (S11) & Dolby C LED control. • Input level is "L" when switch (S11) is on mode. • Input level is "H" when switch (S11) is off mode. • Dolby C LED turned on when output level is "L". • Dolby C LED turned off when output level is "H".
3	In/Out	NRX	Reading of dbx switch (S12) & dbx LED control • Input level is "L" when switch (S12) is on mode. • Input level is "H" when switch (S12) is off mode. • dbx LED turned on when output level is "L". • dbx LED turned off when output level is "H".
4	Output	X <sub>OUT</sub>	• Clock OSC terminal.
5	Input	X <sub>IN</sub>	
6	Input	CE	Reset input terminal. • Connected to V <sub>DD</sub> (+5V).
7	Input	RESET	Reset terminal (The microcomputer is reset when "L" level is applied for longer than one machine cycle.).
8	Input	V <sub>DD</sub>	Power supply terminal.
9	—	CNTR	Timer terminal. • Not used in this unit (Connected to GND).
10	—	INT	External interruption input terminal. • Not used in this unit (Connected to GND).
11	—	C	Terminal with external capacitor. • Not used in this unit.
12	Output	R/P	Record/playback selector & Rec LED control. • Record mode and Rec LED turned on when output level is "L". • Playback mode and Rec LED turned off when output level is "H".
13	Output	BIAS	Bias OSC control. • When output level is "L", Bias oscillation is start. • When output level is "H", Bias oscillation is stop.

Terminal No.	In/Out	Symbol	Function/operation	
14	Output	120/70	Playback equalizer (120μs/70μs) selector. • Equalizer is 120μs mode when output level is "L". • Equalizer is 70μs mode when output level is "H".	
15	Output	MS	In MS action, the muting of recording amplifier is turned on or off.	
16	Output	MMT	Meter mute control. • Meter muting is on mode when output level is "L". • Meter muting is off mode when output level is "H".	
17	Output	NR IN/OUT	Noise reduction selector.	
18	Output	Dolby B/C		
19	Output	dbx		
20	—	CNV <sub>SS</sub>		
21	—	V <sub>SS</sub>	• Connected to GND.	
22	Output	RMF	Reel motor rotation control.	
23	Output	RMR		
24	Output	RPC		
25	Output	CPM	Reel motor torque control. • Torque is Low (playback mode) when output level is "L". • Torque is High (FF/Rew mode) when output level is "H".	
26	Output	SOL	Capstan motor control. • Capstan motor activated when output level is "L". • Capstan motor inactivated when output level is "H".	
27	Output	SOLP		
			Plunger drive control.	

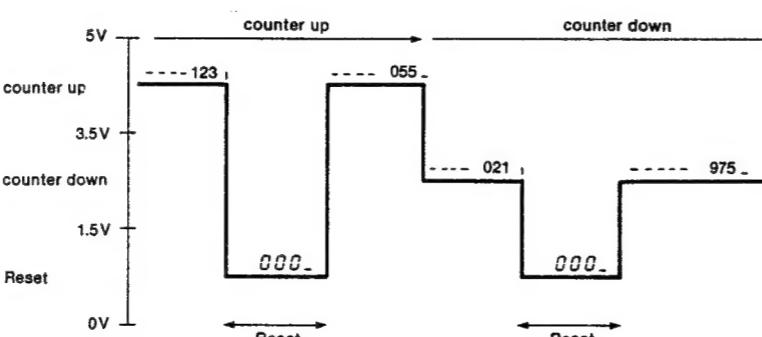
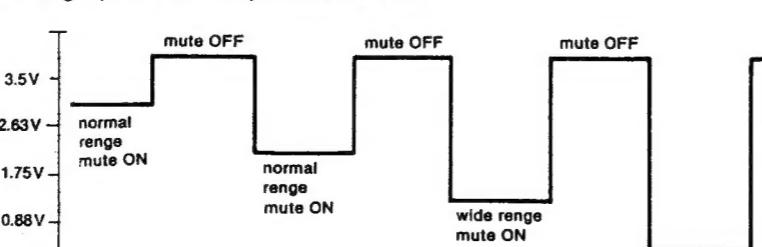
Terminal No.	In/Out	Symbol	Function/operation
28	Output	DMT	Direct muting (DMT) signal. • Direct mute is on mode when output level is "L". • Direct mute is off mode when output level is "H".
29	Output	PLAY LED	Playback LED control. • Playback LED turned on when output level is "L". • Playback LED turned off when output level is "H".
30	Output	UP/DOWN	Counter up/down command. • Counter is down when output level is "L". • Counter is up when output level is "H".
31	Input	TPS	Input to detect presence or absence of tape playback signal. • Input level is "L" when playback signal is present. • Input level is "H" when playback signal is absent.
32	Input	PLS	Rotation pulse signal of reel table.  
33	Input	POF	Detection of power supply. • Input level is "L" when power supply is off mode. • Input level is "H" when power supply is on mode.
34	Input	REC INH	Rec. inhibit input. • Input level is "L" when rec inhibit switch is on mode. • Input level is "H" when rec. inhibit switch is off mode.
35	Output	SCAN 3	Key scan output.
36	Output	SCAN 2	
37	Output	SCAN 1	

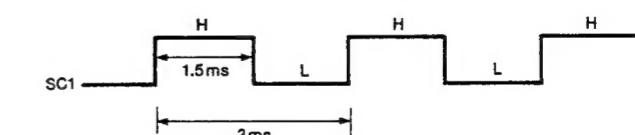
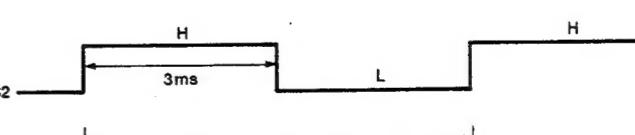
Terminal No.	In/Out	Symbol	Function/operation
38 39 40 41	Input Input Input Input	KEY IN	Key scan input. • Input level is "L" when switch is on mode.
			
38		STOP	NR OFF
39		PLAY	AUTO REC. MUTE
40		REC.	REW
41		PAUSE	FF
			Usually "H" level
42	Input	ATS	Auto tape selector (ATS). • Input level is "L" when ATS is on mode (Normal tape). • Input level is "H" when ATS is off mode (CrO <sub>2</sub> , Metal tape).

## ■ MICROCOMPUTER TERMINAL FUNCTION AND WAVEFORM

(IC701: M50726-427SP)

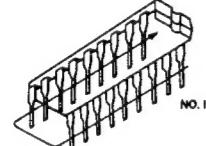
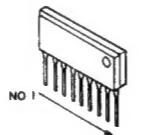
\* This microcomputer is used for tape counter operation and FL meter.

Terminal No.	In/Out	Symbol	Function/operation
1	Input	RESET	Reset terminal
2	Input	INT	Reel table Pulse • The rotation of reel table is detected by photo senser, and the pulses are used to carry up or down for the counter.  
3	—	AV <sub>SS</sub>	Power supply for A-D converter, AV <sub>SS</sub> = 3.5V
4	Input	V <sub>REF</sub>	Reference Power supply
5	Input	K <sub>0</sub>	Lch A-D Converter (Analogue input)
6	Input	K <sub>1</sub>	Rch A-D Converter (Analogue input)
7	Input	K <sub>2</sub>	Reset input • Activate "Low" (counter display is reset to 000-.) Counter up/down select command  
8	Input	K <sub>3</sub>	Meter mute control (activate "Low") Meter range (wide/normal) mode selector  

Terminal No.	In/Out	Symbol	Function/operation
9	Input	A <sub>VDD</sub>	Power supply for A-D converter • Connected to V <sub>DD</sub> .
10	In/Out	S <sub>0</sub>	Counter segment (active "LOW")
11		S <sub>1</sub>	
12		S <sub>2</sub>	
13		S <sub>3</sub>	
14		S <sub>4</sub>	
15		S <sub>5</sub>	
16		S <sub>6</sub>	
18	Output	D <sub>0</sub>	Scan signal for counter drive (SC1)  
19	Output	D <sub>1</sub>	Scan signal for level meter drive (SC2)  
20	—	CNV <sub>SS</sub>	• Connected to V <sub>SS</sub> .
21	—	V <sub>SS</sub>	• Connected to GND.

Terminal No.	In/Out	Symbol	Function/operation	
17		S <sub>7</sub>	B18	Level meter segment
22		D <sub>2</sub>	B17	
23		D <sub>3</sub>	B16	Wide Range
24		D <sub>4</sub>	B15	-40 -30 -24 -20 -16 -12 -10 -8 -6 -4 -2 0 +2 +4 +6 +8 +12 +16 dB
25		D <sub>5</sub>	B14	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18
26		D <sub>6</sub>	B13	-20 -15 -12 -10 -8 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +6 +8 dB
27		D <sub>7</sub>	B12	
28		D <sub>8</sub>	B11	Nomal Range
29	In/Out	D <sub>9</sub>	B10	
30		D <sub>10</sub>	B9	
31		F <sub>0</sub>	B8	SC2
32		F <sub>1</sub>	B7	
33		F <sub>2</sub>	B6	
34		F <sub>3</sub>	B5	
35		G <sub>0</sub>	B4	
36		G <sub>1</sub>	B3	
37		G <sub>2</sub>	B2	
38		G <sub>3</sub>	B1	
39	Output	X <sub>OUT</sub>	Clock OSC terminal	
40	Input	X <sub>IN</sub>		
41		CNTR	Not used in this unit.	
42	Input	V <sub>DD</sub>	Power supply terminal	

## ■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 <table border="1"> <tr><td>AN7016NK</td><td>30 Pin</td><td>M50726-427SP</td><td>42 Pin</td></tr> <tr><td>AN7373K</td><td>28 Pin</td><td>M50720-411SP</td><td>42 Pin</td></tr> <tr><td>AN6294NK</td><td>28 Pin</td><td>μPC1297CA</td><td>18 Pin</td></tr> </table>				AN7016NK	30 Pin	M50726-427SP	42 Pin	AN7373K	28 Pin	M50720-411SP	42 Pin	AN6294NK	28 Pin	μPC1297CA	18 Pin	 <table border="1"> <tr><td>MN6634</td><td>9 Pin</td></tr> <tr><td>M5218L</td><td>8 Pin</td></tr> <tr><td>BA6218</td><td>9 Pin</td></tr> <tr><td>M5238L</td><td>8 Pin</td></tr> </table>	MN6634	9 Pin	M5218L	8 Pin	BA6218	9 Pin	M5238L	8 Pin
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M5238L	8 Pin																							
2SJ40CD 2SK381D	2SB621A-R 2SD592ANCQ	2SA1309AQS 2SC3311A-Q 2SD1330R 2SB1030Q	UN4211	UN4113, UN4114																				
2SA885Q 2SC1846-Q	2SA1253-S	2SD1265-O 2SB941-P	UN4211...R1 - R2: 10K UN4114...R1: 10K, R2: 47K	UN4113...R1 - R2: 10K UN4114...R1: 10K, R2: 47K																				
Anode Cathode Ca	LN38GCPP(GREEN) LN48YCPP(YEL) LN88RCPP(RED)	Anode Cathode Ca	MA165 SVD1SR35200A	MA4091-M MA4062-M MA4082M MA4056-M MA4047M																				

## ■ REPLACEMENT PARTS LIST

Notes: \* Important safety notice:  
Components identified by the  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>INTEGRATED CIRCUITS</b>					
IC1	AN7016NK	I.C.REC/RLAY AMP	D5, D6	MA165	DIODE
IC2, IC3	M5218L	I.C.BUFFER AMP	D7, D8	MA165	DIODE
IC4, IC5	MN6634	I.C.NR SELECTOR	D9, D10	MA165	DIODE
IC301	UPC1297CA	I.C.DOLBY HX PRO	D11, D301	MA165	DIODE
IC401, IC402	AN7373K	I.C.DOLBY B/C NR	D505	MA165	DIODE
IC501	AN6294NK	I.C.DBX AMP	D601, D602 $\Delta$	SVD1SR35200A	RECTIFIER
IC701	M50726-427SP	I.C.MICRO COMPUTER	D603, D604 $\Delta$	SVD1SR35200A	RECTIFIER
IC702	M5238L	I.C.BUFFER AMP	D605, D606	MA165	DIODE
IC801	M50720-411SP	I.C.MICRO COMPUTER	D607, D608	MA4091-M	DIODE
IC802	BA6218	I.C.MOTOR DRIVE	D609	MA4062-M	DIODE
IC803	M5218L	I.C.BUFFER AMP	D701, D702	MA165	DIODE
<b>TRANSISTORS</b>					
Q1, Q2	2SJ40CD	TRANSISTOR	D703	MA165	DIODE
Q3, Q4	2SD381D	TRANSISTOR	D708, D709	MA165	DIODE
Q5, Q6	2SJ40CD	TRANSISTOR	D802, D803	MA165	DIODE
Q7, Q8	2SD381D	TRANSISTOR	D804	MA165	DIODE
Q9	UN4113	TRANSISTOR	D805 $\Delta$	SVD1SR35200A	RECTIFIER
Q13, Q14	2SA1309AQS	TRANSISTOR	D806, D807	MA165	DIODE
Q15, Q16	2SA1309AQS	TRANSISTOR	D808, D809	MA165	DIODE
Q17, Q18	2SC3311A-Q	TRANSISTOR	D810, D901	MA165	DIODE
Q19, Q20	2SC3311A-Q	TRANSISTOR	D902	MA4082M	DIODE
Q21, Q22	2SD1330R	TRANSISTOR	D903	MA4056-M	DIODE
Q23, Q24	2SD1330R	TRANSISTOR	D904, D905	MA165	DIODE
Q301, Q302	2SC3311A-Q	TRANSISTOR	D906, D907	MA165	DIODE
Q303	2SB1030Q	TRANSISTOR	D908	LN88RCPP	LED
Q304	2SB621A-R	TRANSISTOR	D909	LN38GCPP	LED
Q401, Q402	2SC3311A-Q	TRANSISTOR	D910	LN48YCPP	LED
Q403, Q404	2SC3311A-Q	TRANSISTOR	D911, D912	LN38GCPP	LED
Q409	2SA1253-S	TRANSISTOR	D913	LN88RCPP	LED
Q601	2SD1265-0	TRANSISTOR	D914	LN38GCPP	LED
Q602	2SB941-P	TRANSISTOR	D915	LN88RCPP	LED
Q603	2SC1846-Q	TRANSISTOR	D916, D917	MA165	DIODE
Q701	UN4113	TRANSISTOR	D918, D919	MA165	DIODE
Q702, Q703	2SB1030Q	TRANSISTOR	D920, D921	MA165	DIODE
Q704	UN4211	TRANSISTOR	D922, D923	MA165	DIODE
Q705, Q706	2SC3311A-Q	TRANSISTOR	D924, D925	MA165	DIODE
Q707, Q708	2SC3311A-Q	TRANSISTOR	D926, D927	MA165	DIODE
Q709, Q710	UN4113	TRANSISTOR	(EK, XL)		
Q711, Q712	UN4113	TRANSISTOR			
Q713, Q714	UN4113	TRANSISTOR			
Q715, Q716	UN4113	TRANSISTOR			
Q717, Q718	UN4113	TRANSISTOR			
Q719, Q720	UN4113	TRANSISTOR			
Q721, Q722	UN4113	TRANSISTOR			
Q723, Q724	UN4113	TRANSISTOR			
Q725, Q726	UN4113	TRANSISTOR			
Q727	2SB621A-R	TRANSISTOR			
Q728	UN4211	TRANSISTOR			
Q801	2SC3311A-Q	TRANSISTOR			
Q802, Q803	UN4113	TRANSISTOR			
Q804, Q805	UN4113	TRANSISTOR			
Q806	UN4113	TRANSISTOR			
Q807	2SC3311A-Q	TRANSISTOR			
Q808	2SA1309AQS	TRANSISTOR			
Q809, Q810	UN4211	TRANSISTOR			
Q901, Q902	2SD592ANCQ	TRANSISTOR			
Q903	2SD592ANCQ	TRANSISTOR			
Q904	2SA885Q	TRANSISTOR			
Q905	2SC3311A-Q	TRANSISTOR			
Q908, Q909	UN4114	TRANSISTOR			
Q910, Q911	UN4211	TRANSISTOR			
<b>DIODES</b>					
D1, D2	MA165	DIODE	L1, L2	SLQX303-1K	CHOKE COIL
D3, D4	MA165	DIODE	L3, L4	SLQX272-1YT	CHOKE COIL
<b>COILS AND TRANSFORMERS</b>					
L401, L402	QLB40048	M.P.X. COIL	L403, L404	SLM188-K	M.P.X. COIL
T301	SL9C19-K	OSCILLATOR COIL	T303, T304	SL9B1-K	OSCILLATOR COIL
T601 $\Delta$	SLT5V26-W	POWER TRANSFORMER	T601 $\Delta$	SLT5V27-W	POWER TRANSFORMER
[E, EH, EG]			[X, XB]	SLT5V28-W	POWER TRANSFORMER
T601 $\Delta$	SLT5V27-W		T601 $\Delta$	SLT5V31-W	POWER TRANSFORMER
[M, MC]			[E, EH, EG]		
Z701	EXBF8E471J	COMPONENT COMBINATION	Z901	EXBF5E562J	COMPONENT COMBINATION

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
OSCILLATORS					
X701	SVFCST250MG	CERAMIC FILTER	S7	SSG13	SW, REC MUTE
X801	EF0FC2004A4	CERAMIC FILTER	S8	SSS147	SW, TIMER
DISPLAYS					
FL1	SADBG506GK	DISPLAY TUBE	S9, S10	SSG13	SW, NR OFF/B
SWITCHES					
S1, S2	SSG13	SW, REC/PLAY	S11, S12	SSG13	SW, C/DBX
S3, S4	SSG13	SW, STOP/FF	S13	SSG13	SW, RESET
S5, S6	SSG13	SW, REW/PAUSE	S601	△ ESB8249V	POWER SWITCH
			S602	△ SSR187-1	SW, VOLTAGE SELECT
			(EK, XA, XB)		
			S1001, S1002	SMQA1252	SWITCH
			S1003	SMQA1252	SWITCH

## ■ RESISTORS & CAPACITORS

\* Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

Resistor Type	Wattage	Tolerance
ERD: Carbon Resistor	10 : 1/8W	F : ± 1%
ERC: Solid Resistor	25 : 1/4W	G : ± 2%
ERF: Incombustible	50 : 1/2W	J : ± 5%
Box-Shaped	18 : 1/8W	K : ± 10%
Wire-Wound	14 : 1/4W	M : ± 20%
Resistor	12 : 1/2W	
ERG: Metal Oxide-Film	1 : 1W	
Resistor	2 : 2W	
ERM: Wire-Wound	3 : 3W	
Resistor	S1 : 1/2W	
ERO: Superstable	S2 : 1/4W	
Metal Film	6G : 1/10W	
Resistor	8G : 1/8W	
ERX: Metal-Film		
Resistor		
RRJ: Chip Resistor		
ERJ: Chip Resistor		

\* Capacity are in microfarads (μF) unless specified otherwise, P=Picofarads.

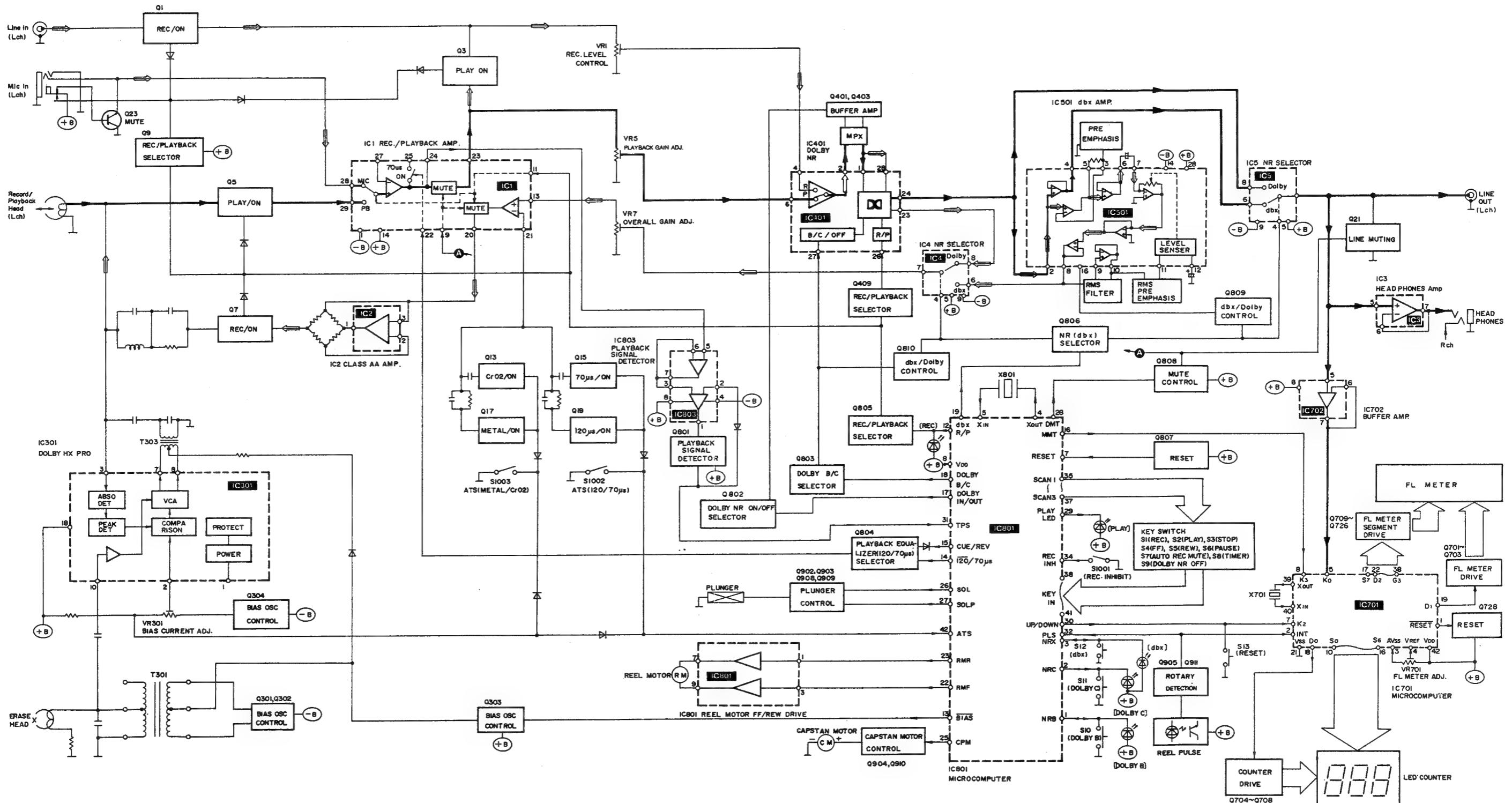
\* Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

Capacitor Type	Voltage	Tolerance
ECCD: Ceramic Capacitor (Chatacon)	(ECCD, ECKD Type) 1H : 50V DC 2H : 500V DC	K : ± 10% M : ± 20% Z : +80%
ECKD: Ceramic Capacitor (ECFD Type)	C : 12V DC D : 25V DC	J : ± 5% G : ± 2% F : ± 1%
ECFD: Semiconductor	E : 50V DC	C : ± 0.25pF D : ± 0.5pF
ECE□: Ceramic Capacitor (ECQ Type)	05 : 50WV DC 1 : 100WV DC	O : 4V 0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 1J : 63V 2A : 100V
ECS□: Tantalum Fixed (ECE, ECS Type)		
ECQ□: Electrolytic Capacitor		
ECQ: Polystyrene Film Capacitor		
ECQS: Polystyrene Film Capacitor		
ECQ: Polypropylene Film Capacitor		
ECQV: T.F Capacitor		
ECU□: Chip Capacitor		
RCU□: Cylindrical Ceramic Capacitor		

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
RESISTORS					
R1, R2	ERDS2TJ183	R62	ERD2FCG330	R435, R436	ERDS2TJ562
R3, R4	ERDS2TJ473	R63, R64	ERDS2TJ102	R448	ERDS2TJ392
R5, R6	ERDS2TJ102	R65, R66	ERDS2TJ223	R501, R502	ERDS2TJ432
R7, R8	ERDS2TJ472	R67, R68	ERDS2TJ103	R503, R504	ERDS2TJ622
R9	ERDS2TJ104	R69, R70	ERDS2TJ223	R505, R506	ERDS2TJ243
R10	ERDS2TJ473	R73, R74	ERDS2TJ223	R507, R508	ERDS2TJ913
R11, R12	ERDS2TJ820	R301, R302	ERDS2TJ153	R509, R510	ERDS2TJ472
R13, R14	ERDS2TJ153	R303	ERDS2TJ153	R511, R512	ERDS2TJ333
R15, R16	ERDS2TJ564	R305, R306	ERDS2TJ154	R513, R514	ERDS2TJ333
R17, R18	ERDS2TJ682	R307, R308	ERDS2TJ220	R515, R516	ERDS2TJ682
R19, R20	ERDS2TJ155	R309, R310	ERDS2TJ180	R517, R518	ERDS2TJ182
R21, R22	ERDS2TJ683	R311	ERDS2TJ473	R519, R520	ERDS2TJ183
R23, R24	ERDS2TJ101	R312	ERDS2TJ102	R521	ERDS2TJ102
R25, R26	ERDS2TJ103	R313, R314	ERDS2TJ221	R523, R524	ERDS2TJ123
R27, R28	ERDS2TJ100	R315	ERDS2TJ820	R525, R526	ERDS2TJ123
R29, R30	ERDS2TJ330	(M, MC, E)		R527, R528	ERDS2TJ112
R31, R32	ERDS2TJ102	(XB)		R529, R530	ERDS2TJ112
R33, R34	ERDS2TJ332	R315	ERD2FCG820	R531, R532	ERDS2TJ223
R35, R36	ERDS2TJ473	(EK, XL)		R533	ERDS2TJ103
R37, R38	ERDS2TJ472	R316	ERDS2TJ1R0	R601	ERDS1FJ391
R39, R40	ERDS2TJ103	R317	ERDS2TJ102	(M, MC, E)	ERDS2TJ391
R41, R42	ERDS2TJ272	R318	ERDS2TJ103	(E, EG, XA)	
R43, R44	ERDS2TJ560	R319	ERDS2TJ222	(XB)	
R45, R46	ERDS2TJ222	R321, R322	ERDS2TJ392	R602	ERDS1FJ391
R47, R48	ERDS2TJ272	R401, R402	ERDS2TJ242	(E, EG, XA)	
R49, R50	ERDS2TJ331	R403, R404	ERDS2TJ562	R602	ERDS2TJ391
R51, R52	ERDS2TJ332	R405, R406	ERDS2TJ332	(M, MC, E)	
R53, R54	ERDS2TJ122	R407, R408	ERDS2TJ102	(E, EG, XA)	
R55, R56	ERDS2TJ103	R409, R410	ERDS2TJ331	(XB)	
R57, R58	ERDS2TJ182	R411, R412	ERDS2TJ104	R603	ERD2FCJ8R2
R59, R60	ERDS2TJ333	R413, R414	ERDS2TJ564	(E, XL)	
R61	ERDS2TJ330	R415, R416	ERDS2TJ223	R603	ERX1ANJ8R2
(M, MC, E)	(E, EG, XA)	R417, R418	ERDS2TJ682	(M, MC, E)	
(XB)		R419, R420	ERDS2TJ471	(E, EG, XA)	
R61	ERD2FCG330	R421, R422	ERDS2TJ912	(XB)	
(E, XL)		R423, R424	ERDS2TJ473	R604	ERDS2TJ102
R62	ERDS2TJ330	R425, R426	ERDS2TJ512	R605	ERDS2TJ270
(M, MC, E)	(E, EG, XA)	R427, R428	ERDS2TJ564	(M, MC, E)	
(XB)		R429, R430	ERDS2TJ274	(E, EG, XA)	
		R431, R432	ERDS2TJ684	(XB)	
		R433, R434	ERDS2TJ684		

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
R605	ERD2FCG270	R839	ERDS2TJ393	C322	ECKD1H473ZF
(E, K, XL)		R840	ERDS2TJ103	C323	ECEA1CKS100
R606	ERDS2TJ270	R841	ERDS2TJ104	C324	ECEA1AU101
(M, MC, E)		R842	ERDS2TJ102	C325	ECEA1CKS100
(E, H, EG, XA)		R901, R902	ERDS2TJ103	C401, C402	ECCD1H151K
(XB)		R903	ERF5AJ390	C403, C404	ECEA1CKS100
R606	ERD2FCG270	(E, K, XL)	ERG1ANJ390	C405, C406	ECKD1H471KB
(E, K, XL)		R903	(M, MC, E)	C407, C408	ECQB1H472JZ
R607, R608	ERDS2TJ560	(E, K, XL)	(E, H, EG, XA)	C409, C410	ECQB1H472JZ
		R609, R610	(XB)	C411, C412	ECQB1H333JZ
		ERQ14LKR22		C413, C414	ECAG25ER68L
				C415, C416	ECQM1H154JZ
		R904	ERDS2TJ391	C417, C418	ECEA1CKS100
		R905	ERDS2TJ152	C419, C420	ECQB1H273JZ
		R906	ERG1ANJ560	C421, C422	ECQB1H333JZ
		R907	ERDS2TJ152	C423, C424	ECQB1H392JZ
		R908	ERDS2TJ104	R909, R910	ECQB1H472JZ
		R909, R910	ERDS2TJ273	C425, C426	ECEA1HS0R1
		R911	ERDS2TJ102	C427, C428	ECEA1HS0R1
		R912	ERDS2TJ471	C429, C430	ECEA1HUR22
		R913	ERDS2TJ222	C431, C432	ECKD1H152KB
		R914	ERDS2TJ473	C433, C434	ECKD1H122KB
		R915	ERDS2TJ103	C435, C436	ECEA1AU471

## ■ BLOCK DIAGRAM



**NOTES:**

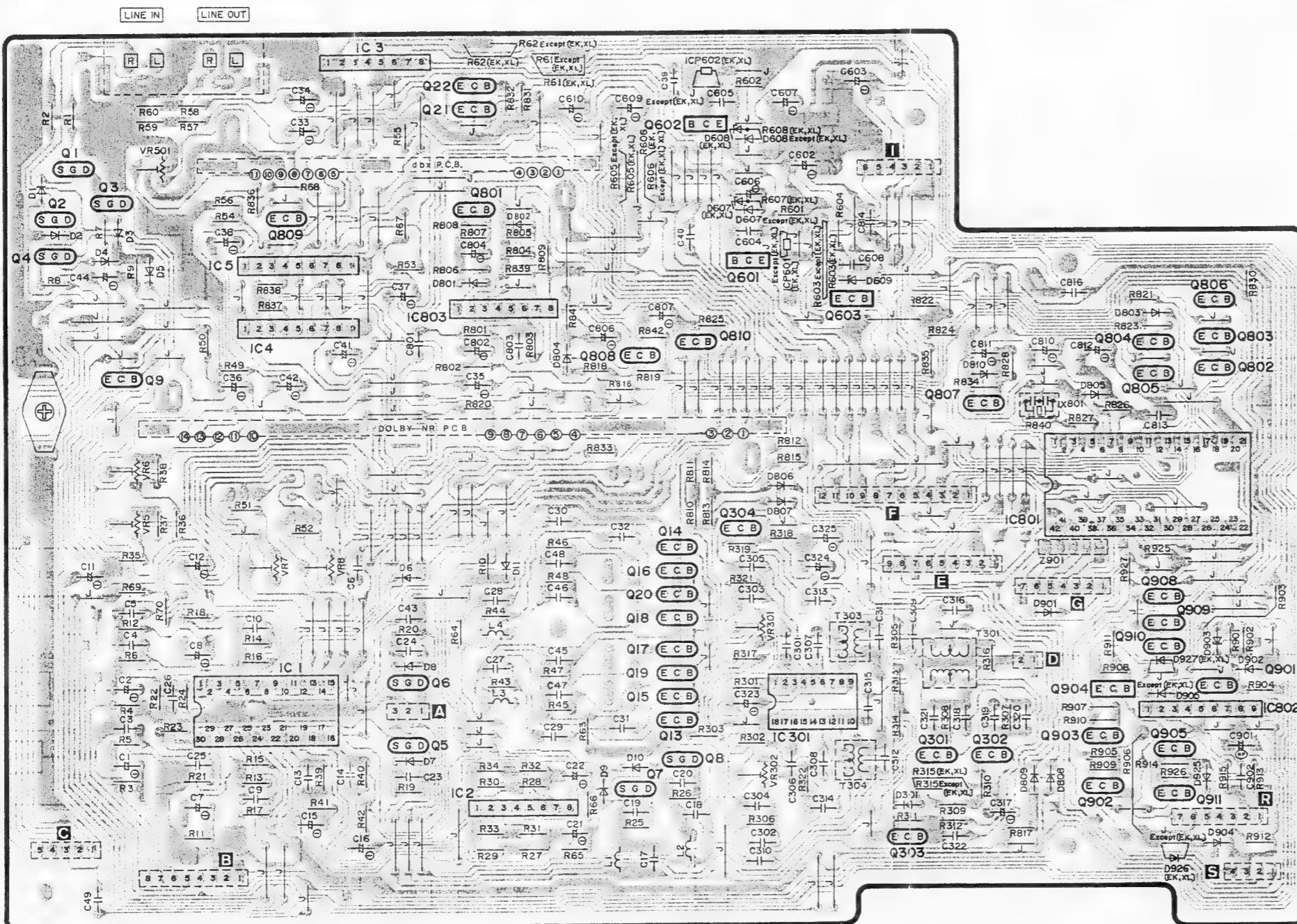
(→): Playback signal

(→): Recording signal

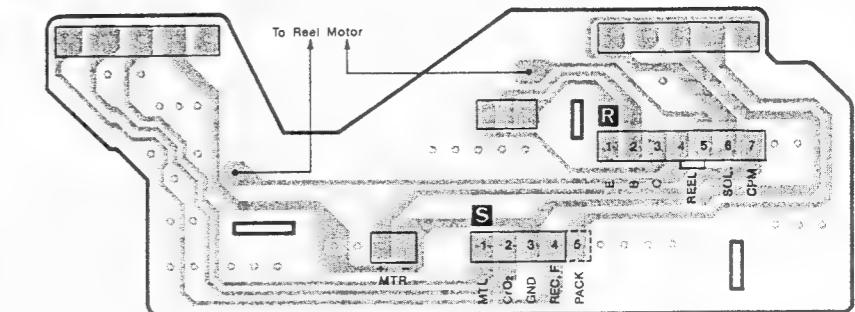
## PRINTED CIRCUIT BOARDS

1

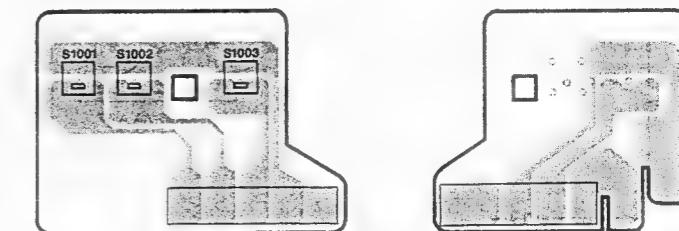
MAIN P.C.B.



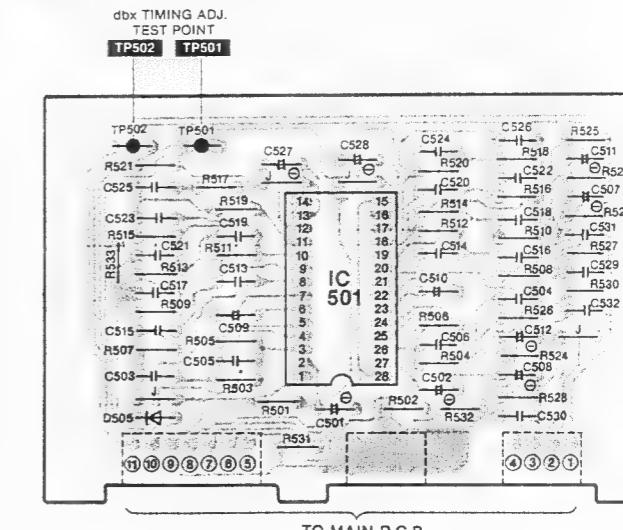
V MECHANISM P.C.B.



## **VII MECHANISM SWITCH P.C.B.**



IX dbx P.C.B.



11

12

13

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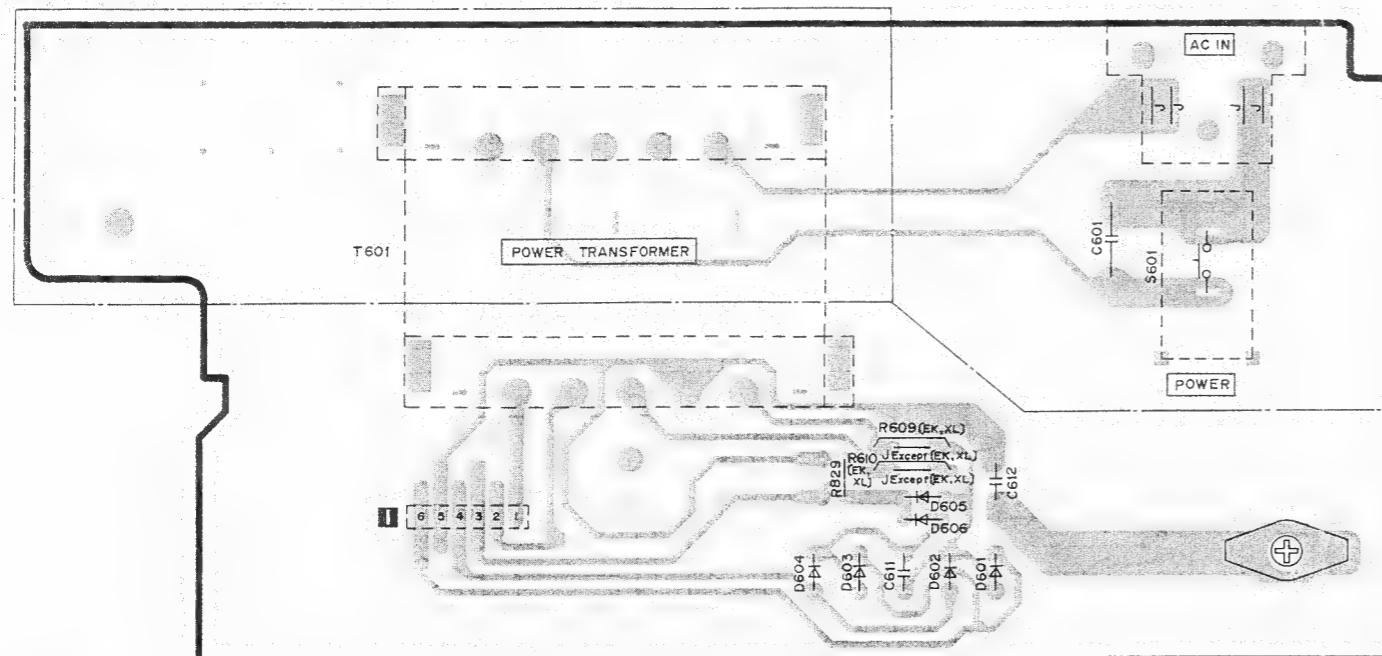
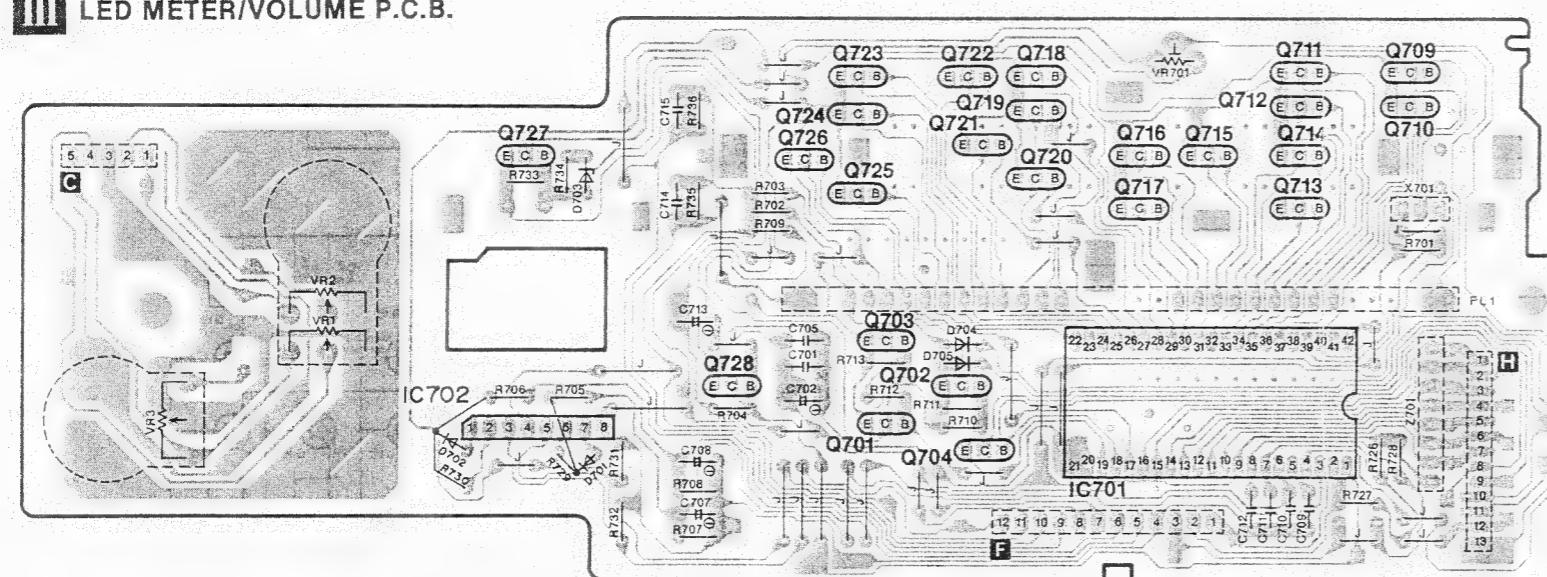
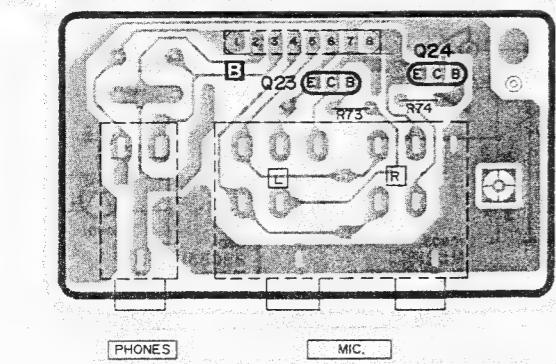
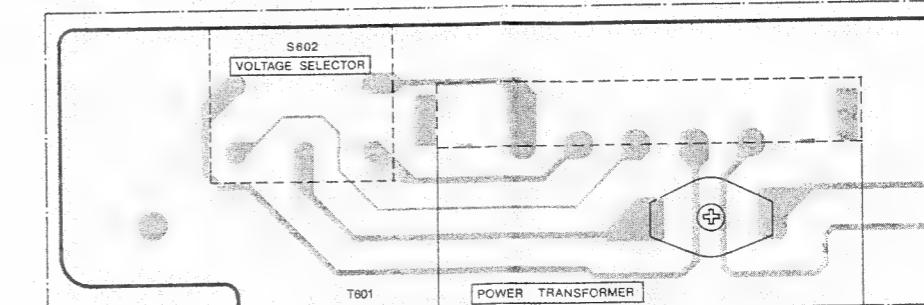
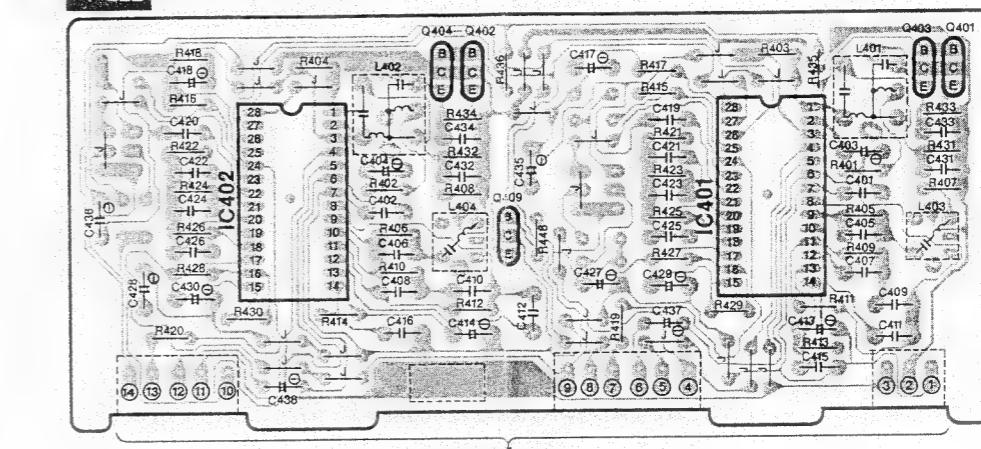
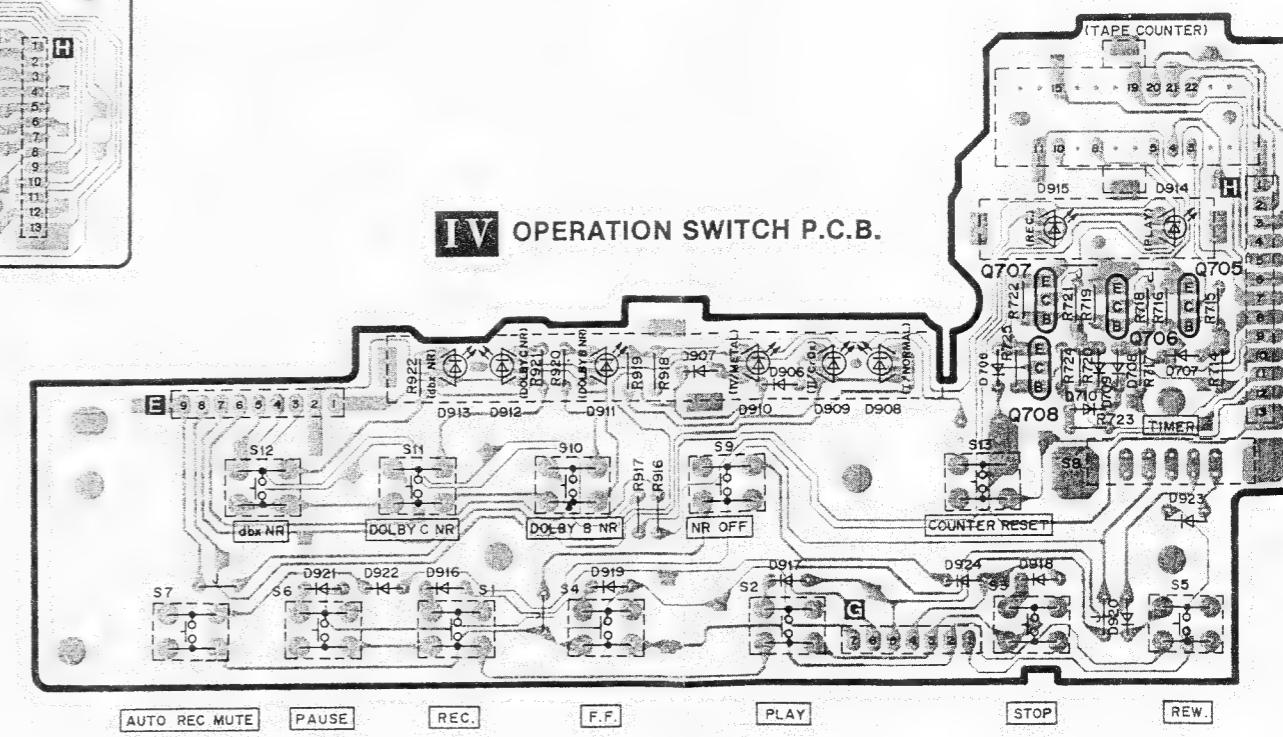
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**II POWER SUPPLY P.C.B. ([M, MC, E, EG, EH] areas)****III LED METER/VOLUME P.C.B.****VI HEADPHONES/MICROPHONE JACK P.C.B.****II POWER SUPPLY P.C.B. ([EK, XL, XA, XB] areas)****VIII DOLBY NR P.C.B.****IV OPERATION SWITCH P.C.B.**

## SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

### Note:

- S1 : Record switch in "off" position.
- S2 : Play switch in "off" position.
- S3 : Stop switch in "off" position.
- S4 : F.F. switch in "off" position.
- S5 : Rew. switch in "off" position.
- S6 : Pause switch in "off" position.
- S7 : Auto rec. mute switch in "off" position.
- S8 : Timer stand-by switch in "off" position.
- S9 : NR off switch in "off" position.
- S10 : Dolby B NR switch in "off" position.
- S11 : Dolby C NR switch in "off" position.
- S12 : dbx switch in "off" position.
- S13 : Counter reset switch in "off" position.
- S601 : Power switch in "on" position.
- S602 : Voltage selector "240V" position. ([EK, XL, XA, XB] areas)
- S1001 : Rec. inhibit switch in "off" position.
- S1002 : ATS (Metal/CrO<sub>2</sub>) in "off (Metal)" position.
- S1003 : ATS (120/70μs) in "off (70μs)" position.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.  
1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
- (—) ... Voltage values at record mode.
- (—□—) indicates B (bias).
- (—→—) indicates the flow of the playback signal.
- (—←—) indicates the flow of the record signal.
- Important safety notice

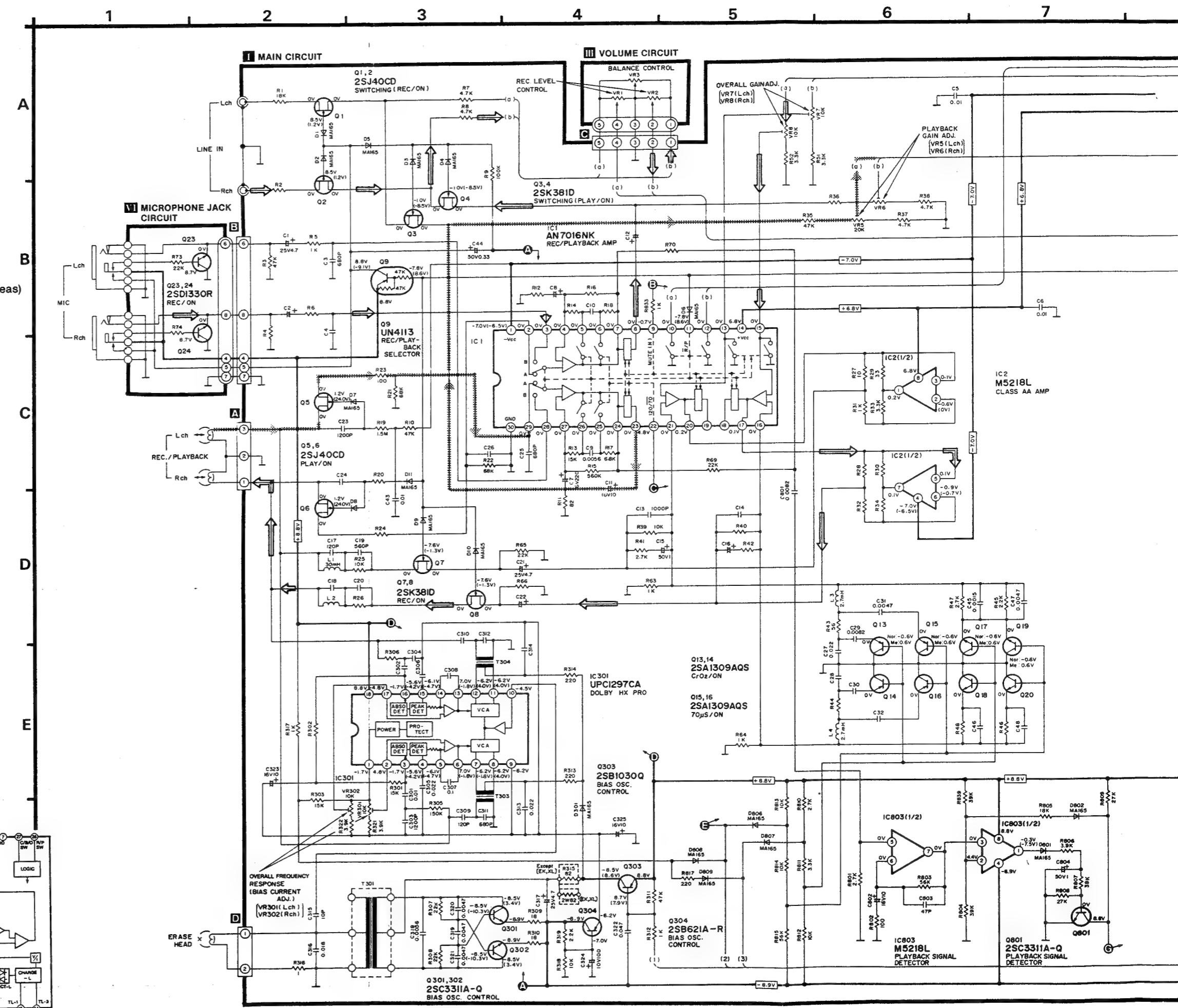
Components identified by the  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

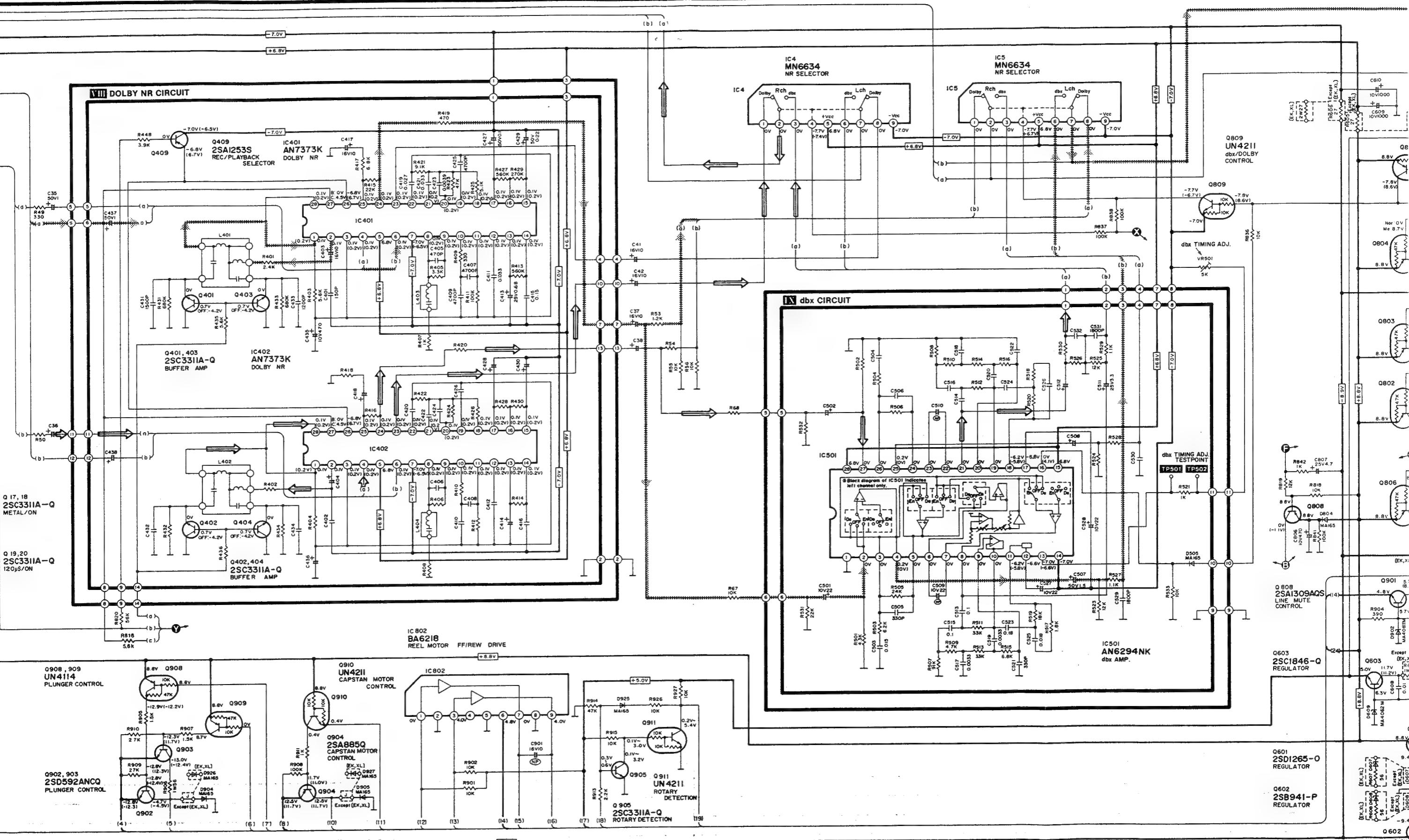
### \*Caution!

IC and LSI are sensitive to static electricity.  
Secondary trouble can be prevented by taking care during repair.  
\*Cover the parts boxes made of plastics with aluminum foil.  
\*Ground the soldering iron.  
\*Put a conductive mat on the work table.  
\*Do not touch the legs of IC or LSI with the fingers directly.

### SPECIFICATIONS \*Input level control...MAX

Overall distortion *Test tape ...QZZCRA for Normal	Normal: Less than 3.5%
...QZZCRX for CrO <sub>2</sub>	CrO <sub>2</sub> : Less than 4.0%
...QZZCRZ for Metal	
Overall S/N ratio *Test tape QZZCRA	Greater than 43dB





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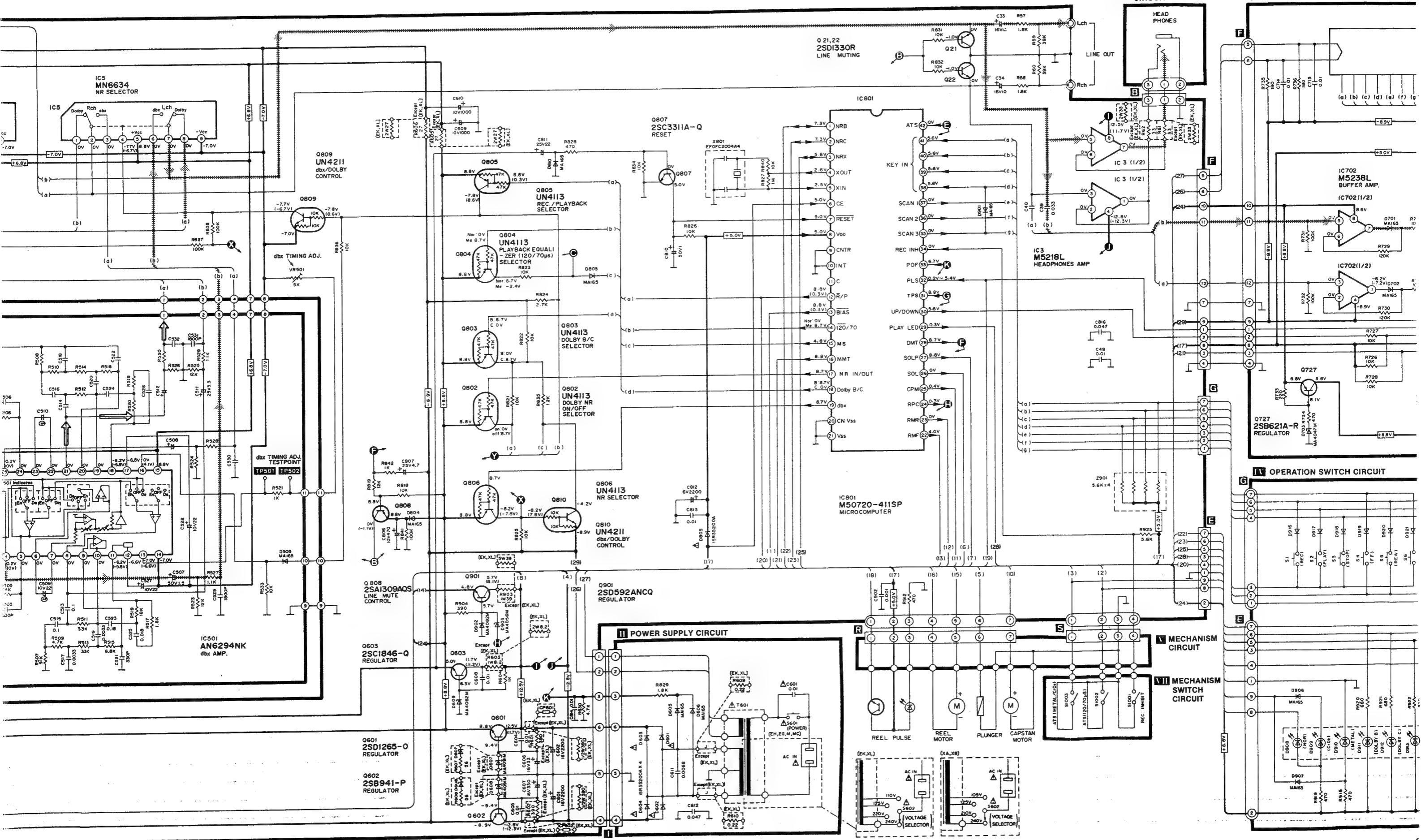
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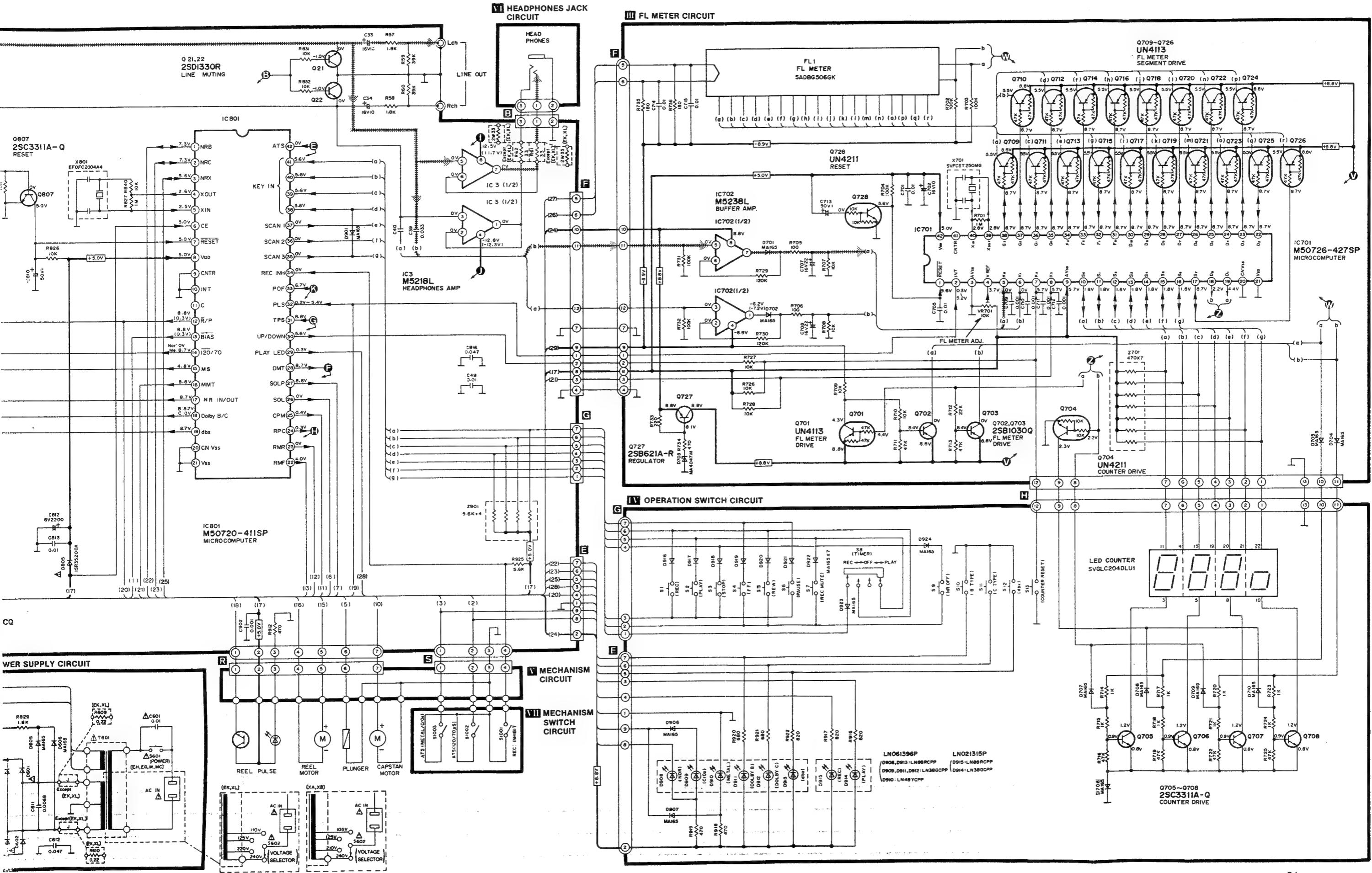
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## REPLACEMENT PARTS LIST

Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description
ASPIRATOR DECK		
100	XSN2+8	SCREW
101	SMQA1001	SPRING
102	SJH98	MAGNETIC HEAD, R/P
103	SJH100	MAGNETIC HEAD, ERASE
104	SMQA1002	SPACER
105	SMQA1256	HEAD BASE
106	SMQA1004	SPRING
107	SMQA1230	SCREW
108	SMQA1231	PINCH ROLLER
109	SMQA1007	WASHER
110	SMQA1014	WASHER
111	SMQA1056	LEVER
112	SMQA1024	SPRING
113	SMQA1010	WASHER
114	SMQA1013	REEL
115	SMQA1026	PLUNGER CAP
116	SMQA1212	PLUNGER COIL
117	SMQA1233	CHASSIS ASSY
118	SMQA1257	SCREW
119	SMQA1235	ARM
120	SMQA1011	SPRING
121	SMQA1012	IDLER PULLEY
122	SMQA1061	CAM GEAR
123	SMQA1258	LEVER
124	SMQA1259	METAL LEVER
125	SMQA1237	SPRING
126	SMQA1062	SPRING
127	SMQA1260	WASHER
128	SMQA1031	WHEEL
129	SMQA1097	SPACER
130	SMQA1240	BRACKET
131	SMQA1241	ARM
132	SMQA1242	MOTOR (REEL)
133	SMQA1261	MOTOR(MAIN)
134	SMQA1038	FLAT BELT
135	SMQA1247	SCREW
136	SMQA1262	SCREW
137	XYN26+C6	SCREW
138	SMQA1263	TAPPING SCREW
139	XTN26+BC	WASHER
140	SMQA1254	WASHER
141	SMQA1255	WASHER
142	SMQA1267	EJECT ARM
143	SMQA1019	SPRING
144	SMQA1222	SCREW
145	SMQA1039	COVER
146	(EG)	
147	SMQA1071	WASHER
148	SMQA1252	SWITCH
149	SMQA1041	PHOTO INTERRUPTER
150	SJT30440LX-V	CONNECTOR(4-P)
151	SJT30740LX-V	CONNECTOR(7-P)

## MECHANICAL PARTS LOCATION

### SPECIFICATIONS

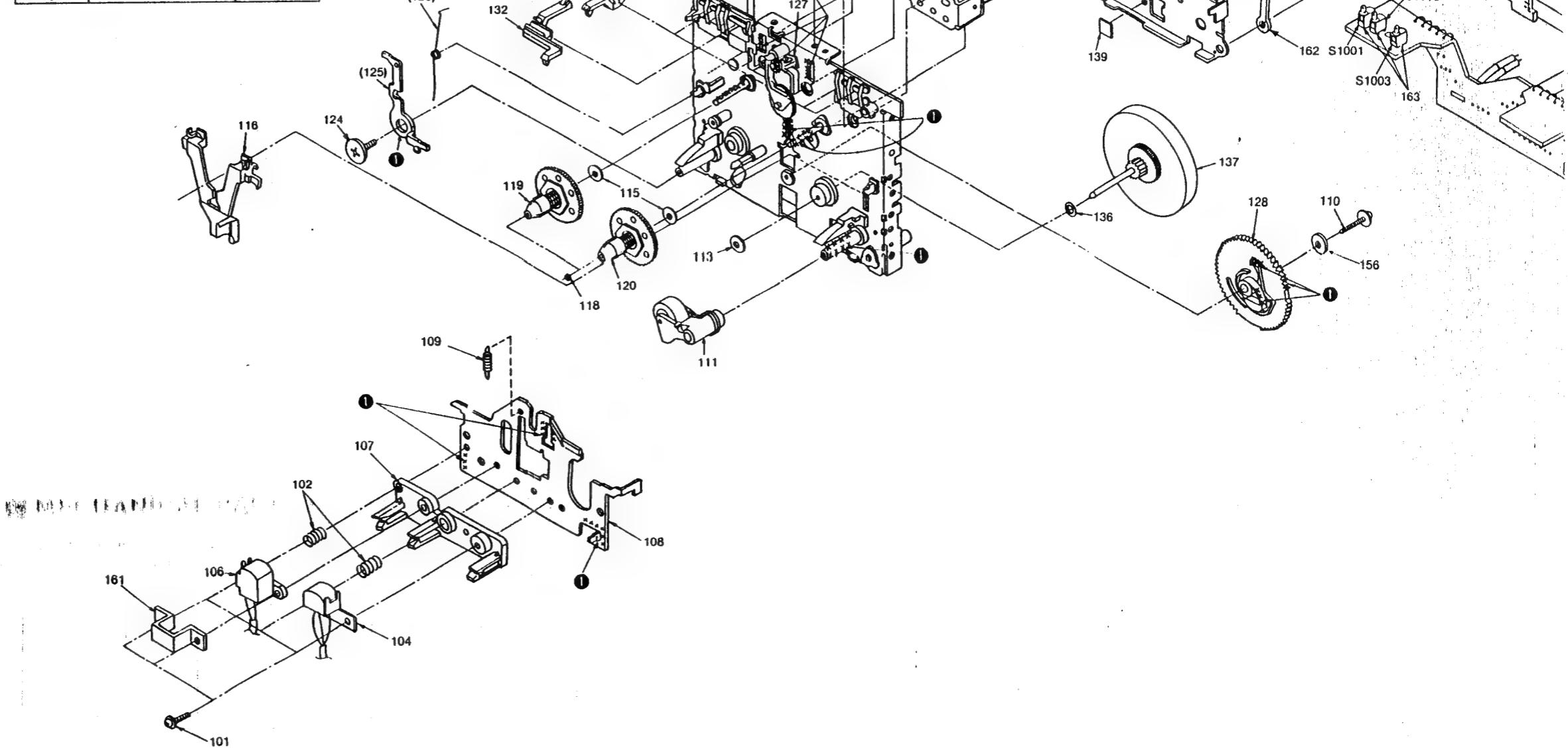
NOTE: The value indicated by the torque tape may fluctuate during torque measurement.  
In that case, obtain the middle of the values.

Takenup tension * Use cassette torque meter.....QZZSRKCT	45±15g·cm
Wow and flutter * Use test tape .....QZZCWAT	Less than 0.07% (WRMS) [EG] 0.08% (WRMS) [E, EH, EK] 0.08% (WRMS) [others]

### NOTES:

- When changing mechanism parts, apply the specified grease to the areas marked "x x" shown in the drawing "Mechanical Parts Location".

Ref. No.	Part Name	Part No.
●	MOLYKOTE	RZZ0L05



161	159 160	158 151	152 150 142 162 150 161	141	143	157 148 149 162	156 153 163	164	165
124	125 126	132	131 123	133 127	121	122 134	140 139 136	137 128	
101 106 116	102	104 109	119	118 120 115 108 111 113 117				110	

## REPLACEMENT PARTS LIST

\* Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description
<b>CASSETTE DECK</b>		
101	XSN2+8	SCREW
102	SMQA1001	SPRING
104	SJH99	MAGNETIC HEAD, R/P
106	SJH100	MAGNETIC HEAD, ERASE
107	SMQA1002	SPACER
108	SMQA1256	HEAD BASE
109	SMQA1004	SPRING
110	SMQA1230	SCREW
111	SMQA1231	PINCH ROLLER
113	SMQA1007	WASHER
115	SMQA1014	WASHER
116	SMQA1056	LEVER
117	SMQA1024	SPRING
118	SMQA1010	WASHER
119	SMQA1013	REEL
120	SMQA1026	REEL
121	SMQA1212	PLUNGER CAP
122	SMQA1233	PLUNGER COIL
123	SMQA1257	CHASSIS ASS'Y
124	SMQA1235	SCREW
125	SMQA1011	ARM
126	SMQA1012	SPRING
127	SMQA1061	IDLER PULLEY
128	SMQA1258	CAM GEAR
131	SMQA1259	LEVER
132	SMQA1237	METAL LEVER
133	SMQA1062	SPRING
134	SMQA1260	SPRING
136	SMQA1031	WASHER
137	SMQA1032	WHEEL
139	SMQA1097	SPACER
140	SMQA1240	BRACKET
141	SMQA1241	ARM
142	SMQA1242	MOTOR (REEL)
143	SMQA1261	MOTOR(MAIN)
148	SMQA1038	FLAT BELT
149	SMQA1247	SCREW
150	SMQA1262	SCREW
151	XYN26+C6	SCREW
152	SMQA1263	SCREW
153	XTN26+C8	TAPPING SCREW
156	SMQA1254	WASHER
157	SMQA1255	WASHER
158	SMQA1267	EJECT ARM
159	SMQA1019	SPRING
160	SMQA1222	SCREW
161	SMQA1039	COVER
(EG)		
162	SMQA1071	WASHER
163	SMQA1252	SWITCH
164	SMQA1041	PHOTO INTERRUPTER
165	SJT30440LX-V	CONNECTOR(4-P)
165	SJT30740LX-V	CONNECTOR(7-P)

## MECHANICAL PARTS LOCATION

### SPECIFICATIONS

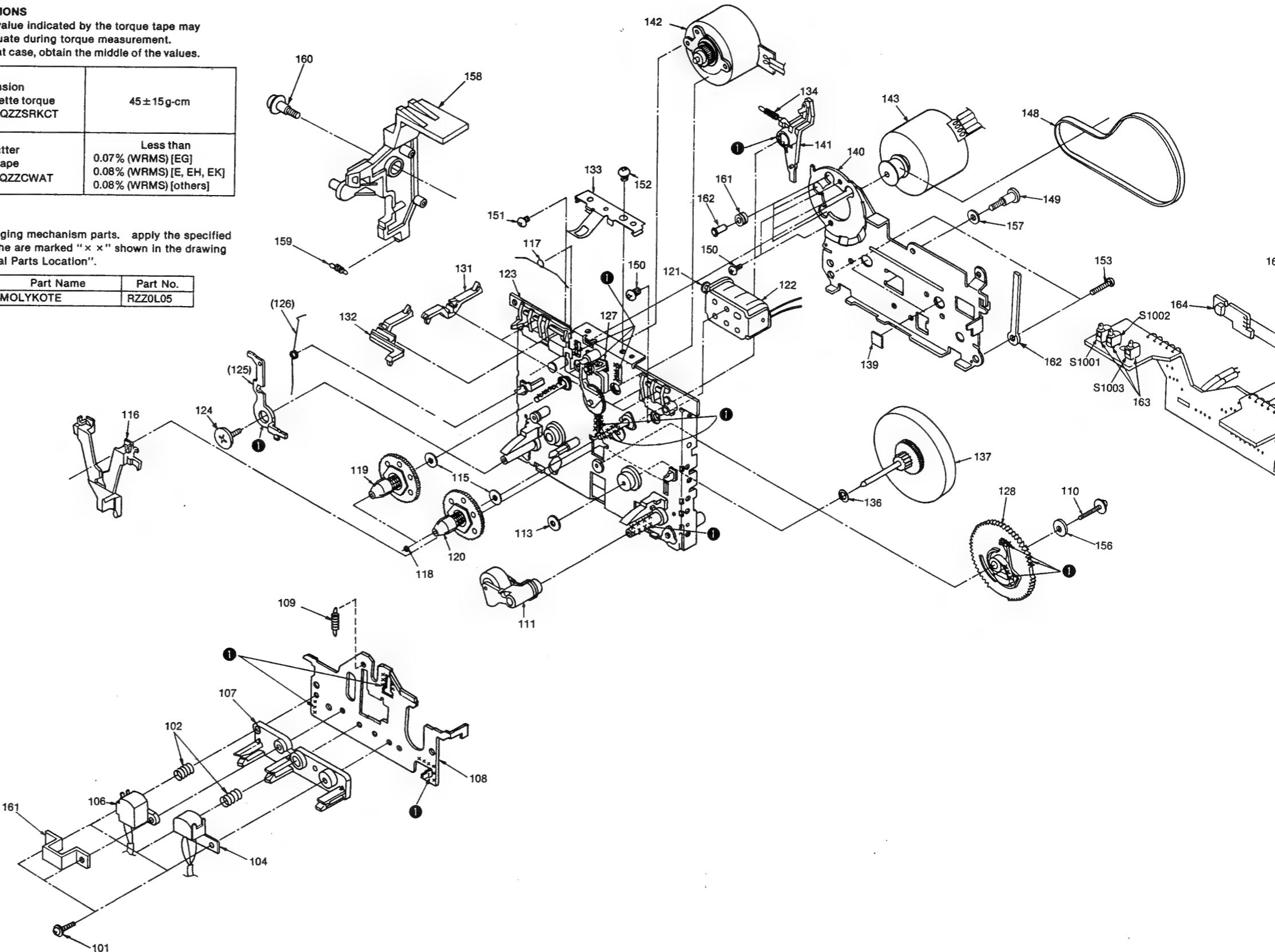
NOTE: The value indicated by the torque tape may fluctuate during torque measurement.  
In that case, obtain the middle of the values.

Takenup tension * Use cassette torque meter.....QZZSRKCT	45±15g-cm
Wow and flutter * Use test tape .....QZZCWAT	Less than 0.07% (WRMS) [EG] 0.08% (WRMS) [E, EH, EK] 0.08% (WRMS) [others]

### NOTES:

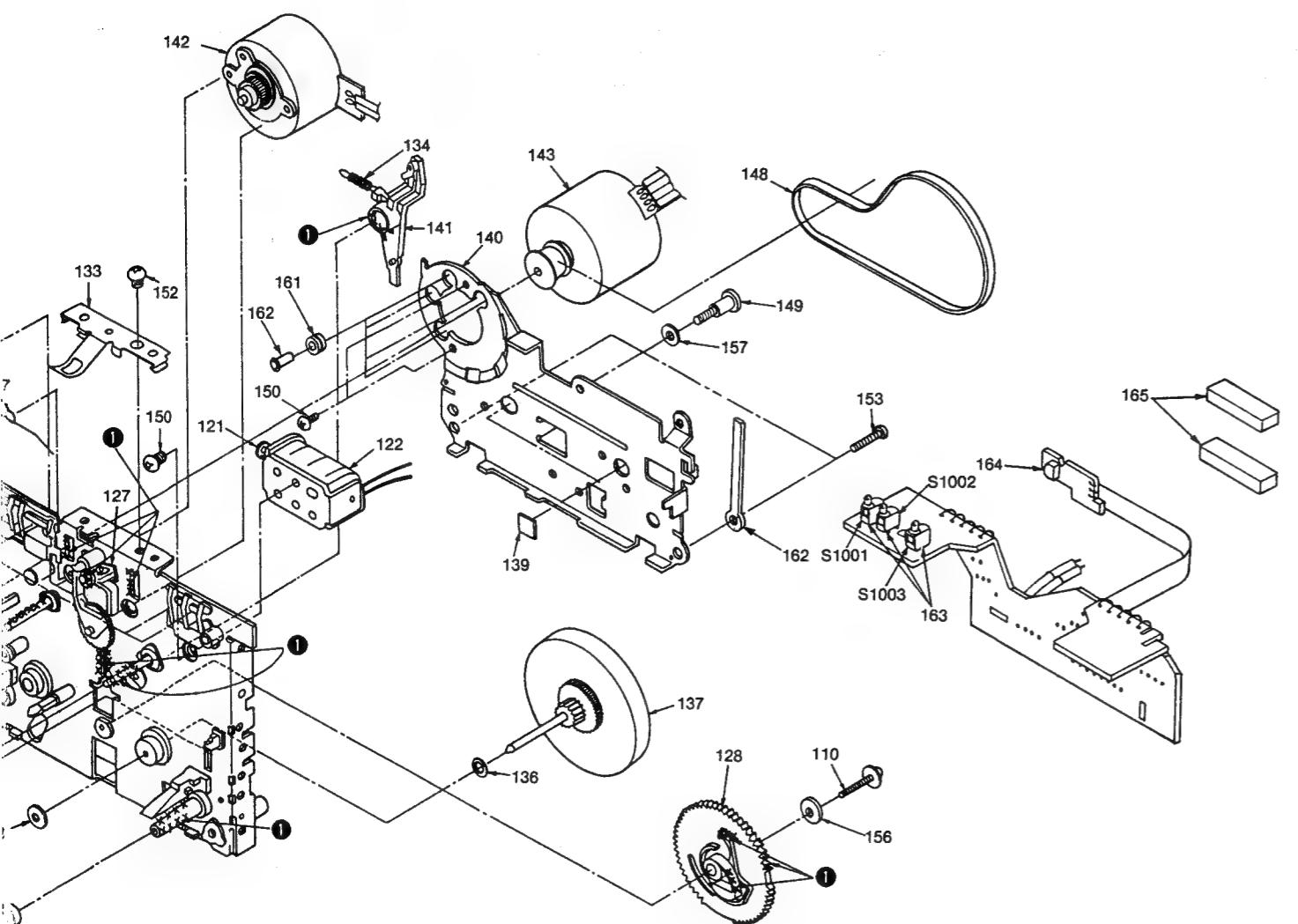
- When changing mechanism parts, apply the specified grease to the areas marked "x x" shown in the drawing "Mechanical Parts Location".

Ref. No.	Part Name	Part No.
①	MOLYKOTE	RZZ0L05

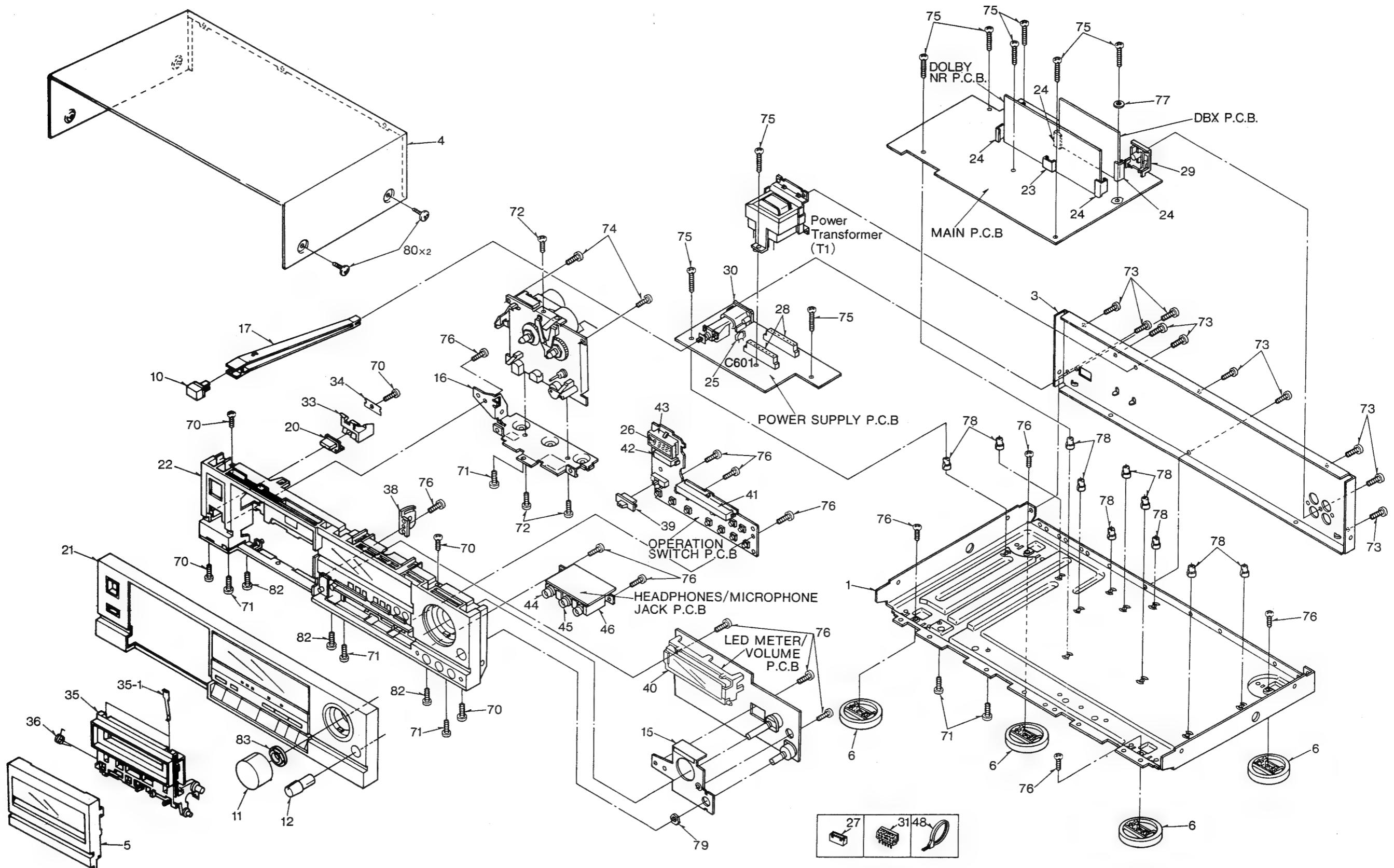


161	159 160	158 151	152 150 142 162 150 161	141 143	157 148 149 162	156 153 163 164	165
124	125 126	132	131 123	133 127	121	122 134	140 139 136
101 106 116	102	107 104 109	119	118 120 115 108	111 113 117	137 128	110

## ■ CABINET PARTS LOCATION

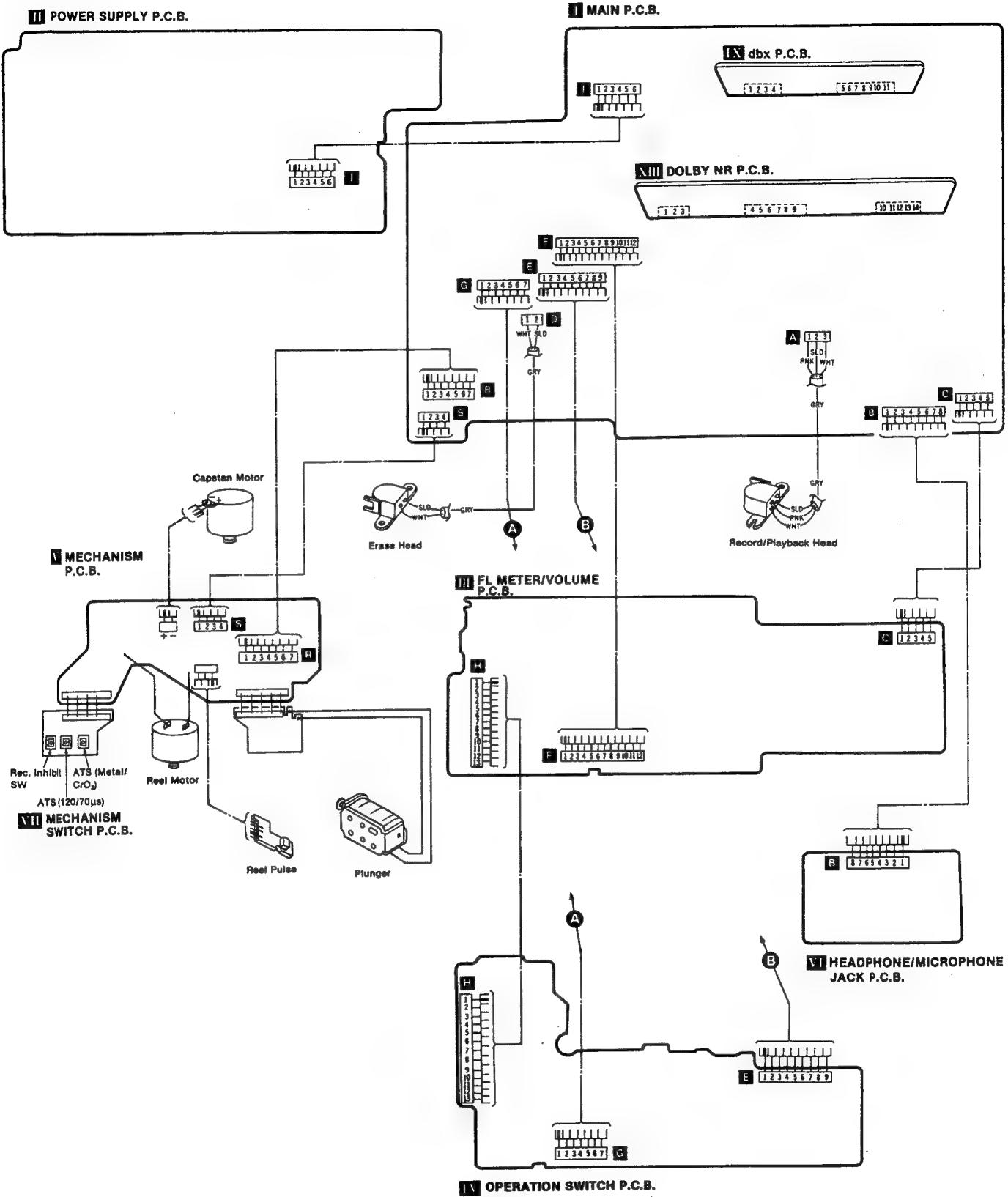


## **CABINET PARTS LOCATION**



21	5	10	22	11	17	12	20	16	4	15	25	16	24	6	23	24	3	24	24	6	6	
36	35	35-1		33	34	38		44	45	46	26	42	40	43	39	30	41	28	27	31	48	29
		70	70	83	71	82	82	71	70	82	71	80	x2	70	76	71	70	70	72	72	74	

# ■ WIRING CONNECTION DIAGRAM



## REPLACEMENT PARTS LIST

## Notes: \* Important safety notice:

Components identified by the  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Blacketed indications in Ref. No. columns specify the area.

Parts without these indications can be used for all areas.

\*  $\otimes$ -marked parts are used for black only, while  $\odot$ -marked parts are for silver type only.

\* Part other than  $\otimes$ -and  $\odot$ -marked are use for both black and silver type.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>CABINET AND CHASSIS</b>					
1	SKUSB605-KE	BOTTOM BOARD	29	SJF3057N	TERMINAL BOARD
3 (EK)	SGP7160-1A	REAR PANEL	30 $\Delta$	SJS9236	AC INLET
3 (XL)	SGP7160-1B	REAR PANEL	31	SJT30540LX-V	CONNECTOR(5-P)
3 (XA, XB)	SGP7160-1C	REAR PANEL	31	SJT30640LX-V	CONNECTOR(6-P)
3 (E)	SGP7160A	REAR PANEL	31	SJT30740LX-V	CONNECTOR(7-P)
3 (EH, EG)	SGP7160B	REAR PANEL	31	SJT30840LX-V	CONNECTOR(8-P)
3 (M, MC)	SGP7160C	REAR PANEL	31	SJT30940LX-V	CONNECTOR(9-P)
4 $\otimes$	SKC2110K99	CABINET BODY	31	SJT31243-V	CONNECTOR(12-P)
4 $\odot$	SKC2110S98	CABINET BODY	33	SUB236-2	EJECT LEVER
5 $\otimes$	SGE1901	CASSETTE LID	34	SUW3090	BRACKET
5 $\odot$	SGE1901-1	CASSETTE LID	35	SGXSB605-KE1	CASSETTE HOLDER
6	SKL313	FOOT	35-1	QBP2006A	SPRING
10 $\odot$	SBC666	BUTTON, POWER	36	SUS69	LEAF SPRING
10 $\otimes$	SBC666-5	BUTTON, POWER	38	QTG40076	GUIDE
11 $\otimes$	SYTM10ZC0A	DIAL, REC LEVEL	39 $\otimes$	SBD145	KNOB
11 $\odot$	SYTM10ZS0A	DIAL, REC LEVEL	39 $\odot$	SBD145-1	KNOB
12 $\odot$	SBDM10MA0A	KNOB	40	SHRM9021	HOLDER(FL)
12 $\otimes$	SBDM10ZK0A	KNOB	41	LN061396P	LED ASS'Y
15	SUW3091	BRACKET	42	LN021315P1	LED ASS'Y
16	SUW3093	BRACKET	43	SHRM9022	HOLDER(LED)
17	SUB268	ROD	44	SJJ126B	JACK
20 $\odot$	SBC736	BUTTON	45	SJJ127HH	JACK
20 $\otimes$	SBC736-1	BUTTON	46	SUW3092	BRACKET
21	SGWSB605-KE	FRONT PANEL	48	SHR301	CLAMPER
21	SGWSB605-SE	FRONT PANEL	49	SJT783	CONTACT
22 $\otimes$	SGXSB605-KE	SUB PANEL	50	SJS5215	SOCKET(2-P)
22 $\odot$	SGXSB605-SE	SUB PANEL	50	SJS5331	SOCKET(3-P)
<b>SCREWS, WASHERS AND NUTS</b>					
70	XTB3+8J	TAPPING SCREW			
71	XTB3+6JFZ	TAPPING SCREW			
72	XTB3+6FFR	TAPPING SCREW			
73	XTB3+8JFZ	TAPPING SCREW			
74	XTB3+12JFR	TAPPING SCREW			
75	XTB3+20J	TAPPING SCREW			
76	XTBS3+10JFZ	TAPPING SCREW			
77	XWA3B	WASHER			
78	SHE187-2	HOLDER			
79	XNS8FZ	NUT			
80 $\odot$	SNE2129	SCREW			
80 $\otimes$	SNE2129-1	SCREW			
82	XTS3+8JFZ	TAPPING SCREW			
83	SNE4021	NUT			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>PACKINGS</b>					
P1 $\otimes$ (E, EK, EH) (XL, XA, XB) (MC, EG)	SPG6138	CARTON BOX	A1 (M)	SQF13092	INSTRUCTION BOOK
P1 $\odot$ (E, EK, EH) (EG, XL, XA) (XB)	SPG6139	CARTON BOX	A1 (MC)	SQF13093	INSTRUCTION BOOK
P1 $\otimes$ (M)	SPG6140	CARTON BOX	A1 (XB)	SQF13105	INSTRUCTION BOOK
P2	SPS5037	PAD	A2	SJPK2202	CORD
P3	SPS5038	PAD	A3 $\Delta$ (EK)	SFDAC05G02	POWER CORD
P4	XZB50X65B02	POLY SHEET	A3 $\Delta$ (XA)	SJA168	POWER CORD
<b>ACCESSORIES</b>					
A1 (E, EH, XA)	SQF13082	INSTRUCTION BOOK	A3 $\Delta$ (E, EH, EG)	SJA170	POWER CORD
A1 (EK)	SQF13083	INSTRUCTION BOOK	A3 $\Delta$ (XL)	SJA170	POWER CORD
A1 (EG)	SQF13088	INSTRUCTION BOOK	A3 $\Delta$ (XB)	SJA183	POWER CORD
A1 (XL)	SQF13091	INSTRUCTION BOOK	A4 $\Delta$ (XA, XB)	RJP120ZBS-H	AC PLUG ADAPTOR

0628050B  
91000241  
SM-R5R605  
SERVICE MANUAL

# dbx/Dolby NR Equipped Stereo Cassette Deck

## DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anleitung für das Modell Nr. RS-B605

### ■ MESSUNGEN UND EINSTELL METHODEN

#### Meßinstrumente

- Elektronisches Voltmeter(EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

#### Tonkopf-Azimuteinstellung

1.Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8 kHz, -20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajousfigur wellenfigur sich, wie abgebildet, 0 Grad nähert.

#### Anmerkung:

Wenn L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2.Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.

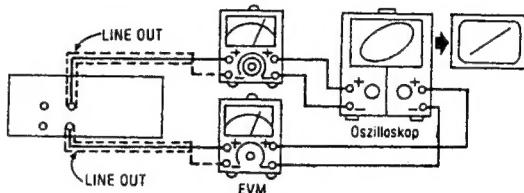


Abb. 1

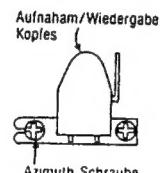


Abb. 2

#### Bandgeschwindigkeitseinstellung

1.Spielen Sie den Mittelteil des Testbands (QZZCWAT) ab.  
2.Stellen Sie den VR im Motor so ein, daß die Abgabe den Normwert erfüllt.

**Normwert:  $3000 \pm 15\text{Hz}$**

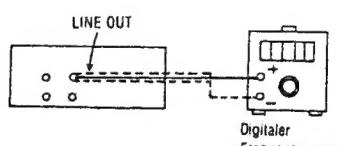


Abb. 3

#### Einstellung der Wiedergabeverstärkungsregelung

1.Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315 Hz, 0 dB) ab.  
2.Stellen Sie VR5 (L-K) und VR6 (R-K) so ein, daß die Abgabe den Normwert erfüllt.

**Normwert:  $0.4\text{V} \pm 0.5\text{dB}$**

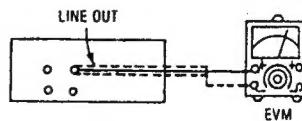


Abb. 4

### Wiedergabefrequenzgang

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12,5kHz~63Hz, -20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in Abb. 6 gezeigten Bereich liegt.

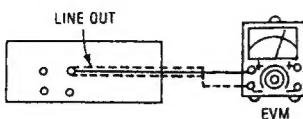


Abb. 5

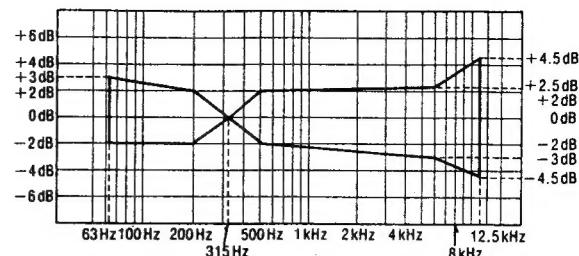


Abb. 6

### Gesamtfrequenzgang (Vormagnetisierungs-strom-Justierung)

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.
2. Geben Sie über einen Lautstärkeregler ein Bezugseingabesignal (1 kHz, -24 dB) ein.
3. Stellen Sie das Signal auf 20 dB und justieren die Frequenz von 50 Hz ~ 12.5 kHz.
4. Nehmen Sie das Wobbelsignal auf.
5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bezugsfrequenz (1 kHz) in dem in Abb. 8 aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie VR301 (L-K) und VR302 (R-K) so, daß der Frequenzpegel mit der Norm übereinstimmt.
- Nach oben im Hochfrequenzbereich ausgleichen....Den vormagnetisierungsstrom anheben.
- Nach unten im Hochfrequenzbereich ausgleichen...Den vormagnetisierungsstrom senken.
7. Wiederholen Sie die Schritte 2 ~ 6 und verwenden das CrO<sub>2</sub> Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 14 kHz (50 Hz ~ 14 kHz) angehoben.
8. Achten Sie darauf, daß sich der Frequenzpegel in dem in Abb. 9 aufgezeigten Bereich befindet.

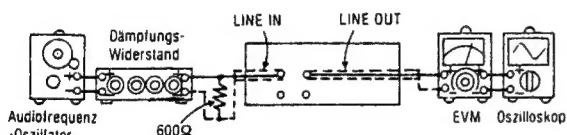


Abb. 7

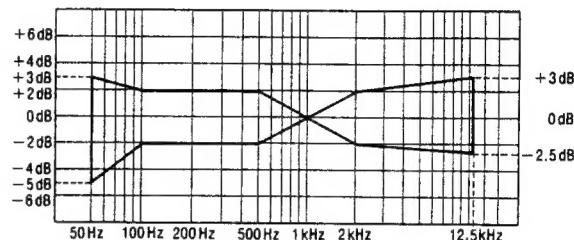


Abb. 8

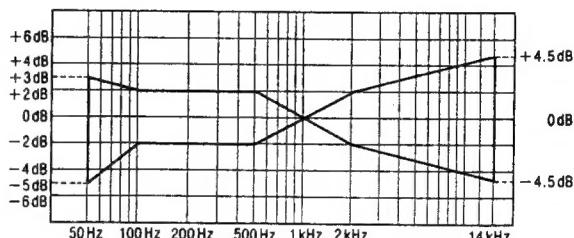


Abb. 9

### Einstellung der Gesamtverstärkungsregelung

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.
2. Legen Sie ein Bezugseingabesignal (1 kHz, -24 dB) an. Stellen Sie das Ausgangssignal auf einen Pegel von 0.4 V ein.
3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.
5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie VR7 (L-K) und VR8 (R-K).
6. Wiederholen Sie die Schritte 2 ~ 5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

Normwert: 0.4V ± 0.5dB

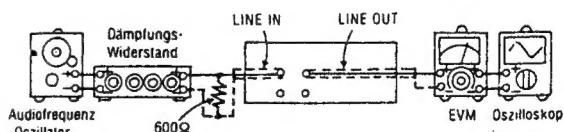


Abb. 10

### Fluoreszenzanzeigeneinstellung

1. Legen Sie das normale Leertestband (QZZCRA) ein und geben bei Aufnahme-/Pause-Betrieb ein Bezugseingabesignal (1 kHz, -24 dB) ein.
2. Verwenden Sie einen Lautstärkeregler und stellen Sie diesen so ein, daß an den "LINE OUT"-Anschlüssen des Kassetten decks 0.4 V anliegen.
3. Justieren Sie VR701 so, daß der "0 dB"-Abschnitt der Anzeige schwach aufleuchtet.

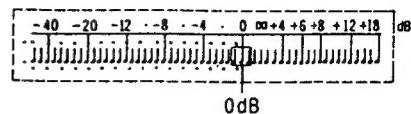


Abb. 11

### dbx Synchronisierung

1. Stellen Sie den Rauschunterdrückungswahlschalter in die dbx Stellung.
2. Spielen Sie den auf dem Testband (QZZCFM) den teil für die Einstellung der Verstärkungsregelung (315 Hz, 0 dB) ab.
3. Schalten Sie ein Gleichspannungsvoltmeter parallel zu TP501 und TP502.
4. Stellen Sie den VR501 so ein, daß die Abgabe den Normwert erfüllt.

Normwert: Gleichspannung 18.4mV ± 0.5mV

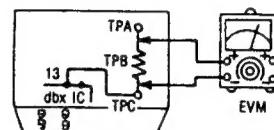


Abb. 12

TPA: TP501, TPB: R521, TPC: TP502